**The CADD/GIS
Technology Center**

*for facilities, infrastructure, and environment*

# A/E/C CADD Standard

## Main Text and Appendices A, B, and C

The A/E/C CADD Standard is
compliant with Version 2.0
of the U.S. National
CAD Standard.

The A/E/C CADD Standard
contains supplemental materials
and DoD specific requirements
not addressed in the U.S. National
CAD Standard.

Release 2.0

Approved For Public Release; Distribution Is Unlimited

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# A/E/C CADD Standard

## *Main Text and Appendices A, B, and C*
## *Appendix D*

Release 2.0

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[1] Bound separately.

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# Preface

The "A/E/C CADD Standard Manual" has been developed by the CADD/GIS Technology Center (CGTC) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design and Drafting (CADD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to consolidate existing CADD drafting standards and to develop data standards that address the entire life cycle of facilities within the DoD. The A/E/C CADD Standard Manual is part of a set of standards being developed by the CGTC. Additional manuals include the following:

a. Contract Language Guidelines for Acquiring CADD and GIS Deliverables from Architect-Engineer (A-E) Consulting Firms

b. Spatial Data Standard for Facilities, Infrastructure, and Environment

c. Facility Management Standard for Facilities, Infrastructure, and Environment

Information on all these documents can be obtained from the CGTC's web page at *http://tsc.wes.army.mil.*

Chapters 1-6 of this manual address topics such as presentation graphics, level/layer assignments, electronic file naming, and standard symbology. Appendices A-D contain tables on model and sheet file level/layer names, color comparisons, and A/E/C CADD symbology. The CGTC's primary goal is to develop a nonproprietary CADD standard that incorporates existing industry, national, and international standards.

Mr. Harold L. Smith is Chief of the CGTC, which is located in the Information Technology Laboratory (ITL), U.S. Army Engineer Research and Development Center, Waterways Experiment Station (WES), Vicksburg, MS. The Acting Director of ITL is Mr. Timothy D. Ables. At the time of publication of this report, the Director of ERDC was Dr. James R. Houston. Commander and Executive Director was COL John W. Morris III, EN.

## United States National CAD Standard

In 1995, the combined resources of the CADD/GIS Technology Center, the American Institute of Architects (AIA), the Construction Specifications Institute (CSI), the United States Coast Guard, the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), the General Services Administration (GSA), and the National Institute of Building Sciences' (NIBS) Facility Information Council began an effort to develop a single CADD standard for the United States. Working together, these organizations agreed to develop an integrated set of documents that collectively would represent the United States National CAD Standard.

The sections of the United States National CAD Standard were developed as follows:

• Layering and model file naming were developed and published by AIA, with assistance from CSI and CGTC.

- Drawing set organization and sheet file naming were developed and published by CSI, assisted by CGTC, and reviewed by AIA.

- Sheet organization was developed and published by CSI, with assistance from AIA and CGTC.

- Schedules were developed and published by CSI, assisted by CGTC, and reviewed by AIA.

- Plotting guidelines (colors and line weights) were developed by CGTC and the United States Coast Guard, and reviewed by CSI and AIA.

- Drafting conventions including notations, symbols, diagrams, scales, and line types were developed by CSI, CGTC, the United States Coast Guard, and SMACNA; assisted by AIA; and published by CSI.

- Nongraphic attributes will be developed and published by CGTC, the International Alliance for Interoperability (IAI), vendors, and trade associations, with review by CSI and AIA.

A Memorandum of Understanding (MOU) was signed on August 8, 1997. In accordance with that MOU, Release 2.0 of the A/E/C CADD Standard follows, utilizes, or references the work developed by each of the signatories. The two main documents referenced within Release 2.0 of the A/E/C CADD Standard are

- "The Uniform Drawing System"
  The Construction Specifications Institute
  601 Madison Street
  Alexandria, VA 22314-1791
  *http://www.csinet.org*

- "AIA CAD Layer Guidelines"
  The American Institute of Architects Press
  1735 New York Avenue, N. W.
  Washington, DC   20006
  *http://www.aiaonline.com/*

Each of these documents can currently be obtained from the authoring agency or can be purchased together as part of the United States National CAD Standard. Additional information on the United States National CAD Standard can be obtained from

- NIBS Facility Information Council
  National Institute of Building Sciences
  1090 Vermont Avenue, N. W., Suite 700
  Washington, DC   20005-4905
  *http://www.nationalcadstandard.org*

# 1 Introduction

## Acronyms

First, a few useful acronyms:

- A-E - Architect-Engineer

- A/E/C - Architectural, Engineering, and Construction

- AIA - American Institute of Architects

- ANSI - American National Standards Institute

- ASTM - American Society for Testing and Materials

- CAD - Computer-Aided Design

- CADD - Computer-Aided Design and Drafting

- CGTC - The CADD/GIS Technology Center

- CSI - Construction Specifications Institute

- DoD - Department of Defense

- FM - Facility Management

- GIS - Geographic Information System

- IAI - International Alliance for Interoperability

- IFC - Industry Foundation Class

- IOC - Intelligent Object Class

- ISO - International Organization for Standardization

-

- NCS - National CAD Standard

- NIBS - National Institute of Building Sciences

- SI - International System of Units (Le Système International d'Unités)

- UDS - Uniform Drawing System

## Scope

This manual provides guidance and procedures for preparing Computer-Aided Design and Drafting (CADD) products within the Department of Defense (DoD).

Chapters 1-6 of this manual address topics such as presentation graphics, level/layer assignments, electronic file naming, and standard symbology. Appendices A-D contain tables on model and sheet file level/layer names, color comparisons, as well as Architectural, Engineering, and Construction (A/E/C) CADD symbology.

## Purpose

The purpose of this manual is to set a basic CADD standard to ensure consistent electronic deliverables (products) within the DoD. These consistent deliverables are part of a comprehensive installation life-cycle management strategy. This manual sets a CADD standard specifically for the architectural, engineering, and construction disciplines of facilities development and civil works projects. As this manual evolves, it will be integrated with other standards initiatives by the CADD/GIS Technology Center (CGTC) for

Facilities, Infrastructure, and Environment such as Contract Language Guidelines, Spatial Data Standards, and Facility Management (FM) Standards.

## Background

The immediate benefits of CADD standards are many: consistent CADD products for customers; uniform requirements for A-E deliverables; sharing of products and expertise; and collection, manipulation, and exchange of database information. Recognizing such potential benefits, each of the DoD agencies independently initiated efforts to establish CADD standards in the late 1980's. The Air Force Logistics Command (1989) released the "Architectural and Engineering Services for CADD Implementation Within Air Force Logistics Command." Headquarters, U.S. Army Corps of Engineers (1990), published Engineer Manual 1110-1-1807, "Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems." In 1993, the Naval Facilities Engineering Command distributed its "Policy and Procedures for Electronic Deliverables of Facilities Computer-Aided Design and Drafting (CADD) Systems."

To consolidate these efforts into a single standard, the CGTC was tasked to develop standards for the A/E/C disciplines includes Civil Works. This manual presents the CGTC's effort at standardizing CADD requirements for A/E/C design and construction documents. To facilitate the use of this standard, supplementary software packages are available that automate the implementation and use of the standard. This software allows the operator to select preset system variables to align with the requirements of the "A/E/C CADD Standard Manual" to ensure consistent and easy compliance with the standard (see Chapter 6, "A/E/C CADD Standard Implementation Tools").

## International System of Units (SI) Considerations

For this standard manual, the impact of the SI, more commonly referred to as the metric system, is addressed on such items as drawing scales, sheet sizes, and dimensioning. The SI was established by the General Conference of Weights and Measures of 1960, as interpreted or modified from time to time for the United States by the Secretary of Commerce under the authority of Public Law 94-168, the Metric Conversion Act of 1975, and the Metric Education Act of 1978. As of January 1, 1992, in accordance with Public Laws 94-168 and 100-418, the Omnibus Trade and Competitiveness Act of 1988, and Executive Order 12770, "Metric Usage in Federal Government Programs," July 25, 1991, all new and revised construction standards and criteria must be developed using the SI.

## Future Technologies

There are several ongoing initiatives to create a universal language for collaborative work in the area of building and construction software. This work stems from the need to automate current building and construction tasks to become more efficient and cost effective. One of these initiatives is by the International Alliance for Interoperability (IAI), a nonprofit building industry alliance comprising architects, engineers, contractors, software vendors, government agencies, research laboratories, and universities. The goal of the IAI is to unite the A/E/C and FM businesses by specifying Industry Foundation Classes (IFCs) as a universal language. The concept behind the IFCs is to create a series of standard intelligent software objects for the building industry that allow all process disciplines (i.e., architects, designers, engineers, builders, facilities managers) to exchange information. The IAI is developing IFCs that allow current software packages such as AutoCAD and MicroStation to share building and construction data. IFCs would improve the quality of the life-cycle of a building from

construction through maintenance and ultimately to demolition. These improvements would result from reductions in expense and delivery time, enhanced communications, and an increase in discipline proficiency.

A prerequisite of this effort is the deployment of mechanisms capable of retaining knowledge during the project life cycle. Intelligent Object Classes (IOCs) can serve this purpose. An IOC gathers information during the progression of the project and makes it available to the participants. Starting from the design phase, IOCs collect additional data about an object, for example, "how to design" or "how to construct" that particular object. The structure of an IOC contains information about the following:

- Generic attributes of common use (e.g., identification, material).

- Methods to support specialist tasks (e.g., volume calculations).

- CADD representation information including geometry and topology.

- Interrelationships with other objects.

In tandem with the IAI effort, the CGTC is developing nongraphic attribute data as part of the A/E/C CADD Standard.

## Interchangeable Terminology

Within the various commercially available CADD systems, many identical or related concepts are given different names. To aid users of this manual, some instances of related or interchangeable terminology used in MicroStation and AutoCAD are listed in Table 1.

## Target Systems

This manual is not targeted toward any specific CADD system or software. However, to ensure successful translations among CADD applications, certain system-specific characteristics were considered and the standard adjusted accordingly. In preparing the standard, several baseline decisions were made:

- The standard must be applicable to the latest release of commercially available CADD packages. AutoCAD and MicroStation were chosen based on their prevalence in the DoD and their availability through the Installation Management/Facilities CAD2 contract.

- The standard is based on CADD applications that utilize layer/level names and reference files.

- The standard requires every final plotted drawing sheet to have its own separate electronic drawing file.

- Since three-dimensional files are not compatible with two-dimensional files, it is recommended that all drawings be created as 3-D files.

## Additions/Revisions

This standard is intended to be neither static nor all-inclusive and thus will be updated and enhanced as appropriate. Suggestions for improvements are strongly encouraged so that subsequent updates will reflect the input and needs of CADD users.

Recommendations or suggested additions should be sent to:

The CADD/GIS Technology Center
USAE Research and Development Center,
  Waterways Experiment Station
ATTN: CEERD-ID-C/Spangler
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Or by e-mail at: *spangls@wes.army.mil*

## Table 1
## Interchangeable Terminology

| MicroStation | AutoCAD | Definition |
|---|---|---|
| Integer d/b | 64-bit floating point d/b | The method for storing drawing attribute data. |
| Disk-based | Memory-based | Where drawing data are stored until the active file is closed. |
| Auxiliary Coordinate System (ACS) | User Coordinate System (UCS) | An XYZ coordinate system where the origin is selected by the user. |
| Active | Current | File or object in use. |
| Cell | Block | Single or multiple entities grouped together to create a single element. |
| Dimension attributes | Dimensions styles | Controls the appearance of dimension elements. |
| .dgn | .dwg | A DOS-based extension for drawing files. |
| Drop | Explode | Converts an element into multiple entities. |
| Dynamic update | Dragmode/rubberbanding | Display of element(s) being drawn or modified as pointer/cursor moves on the screen. |
| Element | Entity | A single object contained in a drawing. |
| Fit | Zoom all | Displays all graphics currently in the drawing file. |
| Global origin/design cube | World Coordinate System/Origin | Defines the location(s) of all entities in a design/drawing using the Cartesian coordinate system. |
| Identify/accept | Select/pick | Entity or entities chosen for manipulation or modification. |
| Image | Slide | A screen capture of graphics in raster format. |
| Key entry field | Command prompt | Allows for keyboard input from users. |
| Key point snap | Object snap (Osnap) | Controls the selection location for entities. |
| Levels | Layers | Used as transparent overlays for display graphics. |
| Line style | Linetype | Defines the appearance of lines. |
| Linestring | Polyline | Connected line segments. |
| Locate tolerance | Pickbox | Identification/selection limits for the drawing cursor. |
| MDL/Visual BASIC | ARX/AutoLISP | System-specific command language. |
| Message field | Status line | Displays current drawing status and/or text output from the application. |
| Monument point | Insertion point | Benchmark point used to place objects in a drawing. |
| Move element | Move | Relocation of entities. |
| Patterning | Hatching | To fill an area within a drawing with a symbolic texture. |
| Precision key in | Coordinate entry | User-defined XYZ values. |
| Reference file | External reference | A design/drawing file attached to an active drawing. |
| Seed file | Prototype drawing | A drawing design template file. |
| Tentative/Data point | Pointing/pick point | A point within the drawing selected using a pointing device. |
| Update | Redraw/Regenerate | Refreshes screen display. |

# 2 Drawing File Organization

## Design Cube

### Available drawing area

The two most extensively used CADD applications within the DoD, AutoCAD and MicroStation, manage the available drawing area in an electronic file differently. MicroStation has a limited drawing area (design cube) composed of individual points that restrict the physical size of any drawing (Figure 1).

MicroStation's design cube has 4,294,967,296 points in each axis (x,y,z) of the design cube. These points are called positional units (PU). Positional units are grouped into larger units called subunits (SU), and subunits are grouped into even larger units called master units (MU). Together, these groups are called working units (MU:SU:PU). These groups will be discussed in more detail in the next section.

By defining the values of working units, the MicroStation user defines the measurable limits of the design cube. For example, the working units for most architectural drawings (feet-inches) are 1:12:8000 (MU = feet, SU = inches). With these working units, a design cube of 44,739 feet per side is created:

$$4,294,967,296 \div (12 \; in./ft \times 8000) = 44,739 \; ft$$

For an SI (metric) drawing with working units of 1:1:100 (MU = millimeters, SU = none), the design cube has a length of 42,949,672 millimeters per side.



**MicroStation's Finite Design Cube**
**(Each axis has 4,294,967,296 positional units)**

**AutoCAD's Infinite Drawing Area**
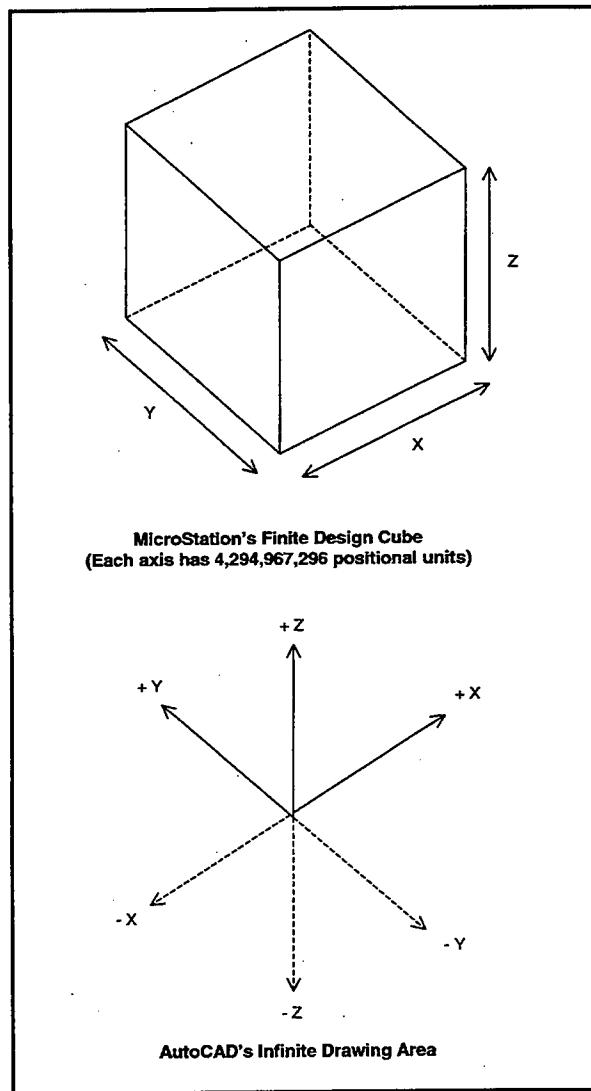
Figure 1. Available drawing size

$4,294,967,296 \div (1\ mm \times 100) = 42,949,672\ mm$

In contrast, AutoCAD's approach provides for a drawing area with infinite range in each positive and negative axis (x,y,z).

**Note:** *The upcoming MicroStation V8 will also allow for an infinite drawing area.*

## File accuracy (units)

CADD systems allow the designer to work in "real world" units. The most common units are feet and inches, feet and tenths of feet, meters, and millimeters.

MicroStation's approach to file accuracy allows the user to set the working units (i.e., real world units) as the following, introduced in the previous section:

- Master units (MU) = The largest unit that may be referred to when working in the design file (e.g., feet, meters).

- Subunits (SU) = Subdivisions of master units in the working unit definition (e.g., inches, millimeters).

- Positional units (PU) = The smallest unit that may be addressed in the design file. The number of positional units per subunit determines the precision of the drawing and the size of the design cube.

In AutoCAD, the basic drawing unit for any file is the distance between two fixed Cartesian coordinates. For example, the distance between coordinates (1,1,1) and (1,1,2) is one drawing unit. A drawing unit can correspond to any measurement (e.g., inch, foot, meter, mile). AutoCAD users may enter the "Units" display option to set the desired drawing units.

The "Units" command of AutoCAD does not have a direct metric system setup. For metric designs, the recommended procedure is to choose the "Decimal" option in the drawing units dialogue box (Figure 2). This will allow
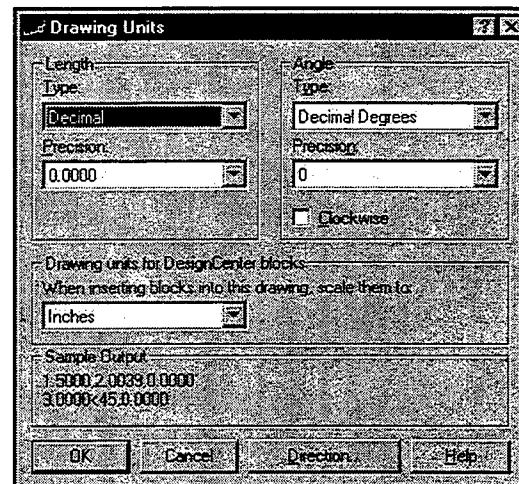


Figure 2. AutoCAD Units Dialog Box

each drawing unit to represent decimal meters, millimeters, etc., at the discretion of the user.

## Drawing units/working units recommendations

Recommendations for working units in MicroStation design files are shown in Table 2.

AutoCAD users should choose either the architectural (feet and inches), engineering (feet and tenths), or decimal (suitable for meters or millimeters) options as provided in the "Units" command screen.

## Origin (global origin)

Positioned within every electronic drawing file is an origin ("global origin" in MicroStation and "origin" in AutoCAD). The origin of a drawing file is important because it serves as the point of reference from which all other elements are located. Origins are typically defined (located) in a drawing file by the Cartesian coordinate system of x, y, and z (Figure 3).

| Table 2 | | | | | |
|---------|---|---|---|---|---|
| **MicroStation Working Units and Global Origins** | | | | | |
| Units | MU | SU | PU | Design Cube Size | Recommended Global Origin |
| Inch-pound (A/E/C) | 1 (ft) | 12 (in) | 8000 | 44,739 ft/side | GO=22369.6213, 22369.6213, 22369.6213 |
| Inch-pound (Civil, Civil Works, Geotechnical, Survey/Mapping) | 1 (ft) | 100 | 10 | 4,294,967 ft/side | GO=0, 0, 2147483.648 |
| Metric (A/E/C) | 1 (mm) | 1 | 100 | 42,949,672 mm/side | GO=21474836.48, 21474836.48, 21474836.48 |
| Metric (Civil, Civil Works, Geotechnical, Survey/Mapping) | 1 (m) | 1000 | 1 | 4,294,967 m/side | GO=0, 0, 2147483.648 |
| Metric (Mechanical Machine Design) | 1 (mm) | 1000 | 1 | 4,294,967 mm/side | GO=2147483.648, 2147483.648, 2147483.648 |
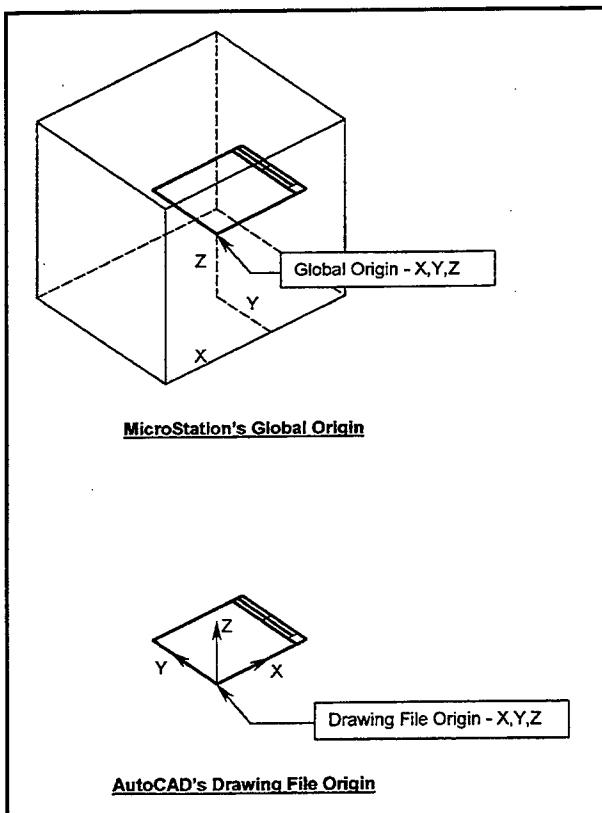


Figure 3. Origins in MicroStation and AutoCAD

The benefit of standardizing the location of the origin of a drawing is most notable in the use of reference files (see section "Reference Files (XREFs)" in Chapter 4). Also, in certain disciplines, particularly mapping, the location of the origin determines the available drawing area (MicroStation only). A standardized origin is also helpful when translating files between CADD applications. Origin recommendations are given in Table 2 (Note: for AutoCAD users the recommended global origin will be 0,0,0).

**Note:** *In MicroStation, the location of the global origin does not affect the size of the design cube, but does limit the range of the positive and negative x, y, and z positional units. For example, a design file with the global origin located in the center of the design cube limits the number of positional units in each axis (x, y, and z) to 2,147,483,648.*

# Model Files and Sheet Files

Two distinct types of CADD files are addressed in this standard: model files and sheet files.

A model file contains the physical components of a building (e.g., columns, walls, windows, ductwork, piping, etc.). Model files are drawn at full scale and typically represent plans, elevations, sections, etc.

A sheet file is synonymous with a plotted CADD drawing file. A sheet file is a selected view or portion of the model file(s) within a border sheet. Sheet files are usually plotted at a particular scale, since the border sheet is scaled up to fit around the full scale model files. In other words, a sheet file is a "ready-to-plot" CADD file.

Figure 4 illustrates how different model files are referenced to a sheet file (notice that the border sheet is always a referenced model file). A sheet file is the combination of referenced model files with sheet-specific text/symbols to create a final "ready-to-plot" CADD file. A useful American Institute of Architects (AIA) rule of thumb states: "Model files are always referenced by other files, while sheet files are never referenced by other files." See Chapter 4 for additional information.

# Electronic Drawing File Naming Conventions

Naming conventions for electronic drawing files (both model files and sheet files) allow CADD users to determine the contents of a drawing without actually displaying the file. They also provide a convenient and clear structure for organizing drawing files within project directories.

## Model file naming convention

The model file naming convention (Figure 5) has one optional field, followed by three mandatory fields. While the first field is optional and may be omitted, the remaining fields must be used and in the correct sequence.

The first field is entirely optional and can be used for a 0 to 20-character *Project Code*. Project codes are developed by the user or the system administrator and are not standardized within this document. The use of Project Codes in file names is highly recommended, because it prevents the same file name from existing in different directories. Following the optional

Model File: Border Sheet
(referenced file)

Model File: Enlarged Floor Plan
(referenced file)

Model File: Plumbing Piping Plan
(referenced file)

Sheet File: Plumbing Piping Plan
(active file)
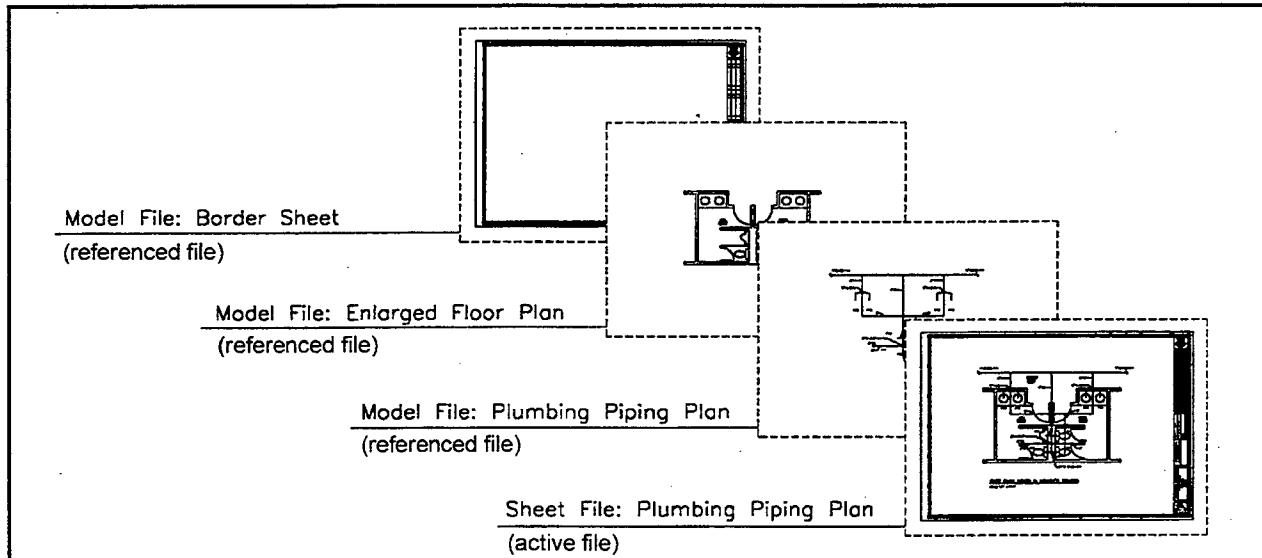
Figure 4. Sheet file composition
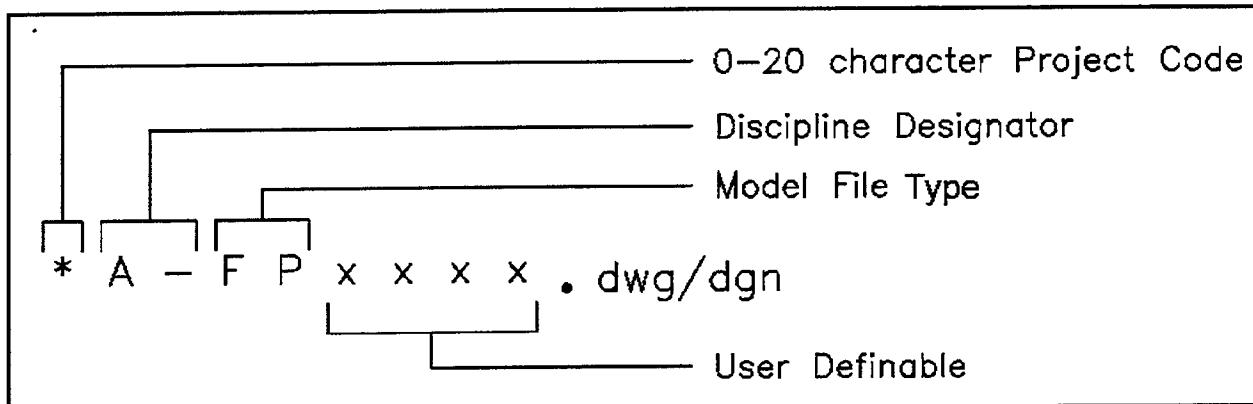
Figure 5. Model file naming convention

Project Code, the first two-character field represents the *Discipline Designator*. The allowable characters for the first character in the Discipline Designator are listed in Table 3. The second character of the Discipline Designator field is always a hyphen "-". The next two-character field represents the *Model File Type* (Table 4). The final four-character field is user-definable.

**Note:** *If the Workspace and Checker are being implemented, all eight of the mandatory characters in the model file name must be used and in the correct sequence. If all of the User Definable characters are not needed, placeholders must be used for the Workspace to function properly.*

**Example:** The model file name for a project at Engineer Research and Development Center (ERDC), Building 8000, 1$^{st}$ floor, Architectural Floor Plan could be:

ERDC8000A-FPF1XX.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F1 is a user-definable set of characters for Floor 1. Since all the user definable characters were not used, the characters XX were used as placeholders.

| Table 3 Discipline Designators | |
| --- | --- |
| **Discipline** | **Designator** |
| General | G |
| Hazardous Materials | H |
| Survey/Mapping | V |
| Geotechnical | B |
| Civil Works | W |
| Civil | C |
| Landscape | L |
| Structural | S |
| Architectural | A |
| Interiors | I |
| Equipment | Q |
| Fire Protection | F |
| Plumbing | P |
| Process | D |
| Mechanical | M |
| Electrical | E |
| Telecommunications | T |
| Resource | R |
| Other Disciplines | X |
| Contractor/Shop Drawings | Z |
| Operations | O |

**Existing/Demolition model file naming.** There are instances when a facility is being renovated and the as-built designs need to be revised to show demolition and new items.

| Table 4 | | |
| --- | --- | --- |
| **Model File Types** | | |
| **Discipline** | **Code** | **Definition** |
| *General* | | |
| | BS* | Border Sheet |
| | KP* | Keyplan |
| *Hazardous Materials* | | |
| | DT | Detail |
| | EL | Elevation |
| | LG* | Legend |
| | PP* | Pollution Prevention Plan |
| | SC | Section |
| | XD* | Existing/Demolition Plan |
| *Survey/Mapping* | | |
| | AL* | Existing Airfield Lighting Plan |
| | CP* | Existing Communication Plan |
| | EU* | Existing Electrical Utilities Plan |
| | FU* | Existing Liquid Fuel Utilities Plan |
| | HP* | Hydrographic Survey Plan |
| | HT* | Existing HTCW Utilities Plan |
| | IW* | Existing Industrial Waste Water Plan |
| | LG* | Legend |
| | NG* | Existing Natural Gas Utilities Plan |
| | PB* | Project Boundary |
| | PR* | Existing Profile |
| | SC | Existing Section |
| | SP* | Survey and Mapping Plan |
| | SS* | Existing Sanitary Sewer Plan |
| | ST* | Existing Storm Sewer Plan |
| | WA* | Existing Domestic Water Plan |
| *Geotechnical* | | |
| | BL* | Boring Location Plan |
| | LB* | Boring Log |
| | LG* | Legend |
| | SH | Schedule |
| *Civil* | | |
| | AF* | Airfield Plan |
| | AM* | Airfield Pavement Marking Plan |
| | CP* | Channel Plan |
| | DT | Detail |
| | EC* | Erosion Control Plan |

| Table 4 (Continued) | | |
| --- | --- | --- |
| **Discipline** | **Code** | **Definition** |
| *Civil (Continued)* | | |
| | EL | Elevation |
| | FU* | Liquid Fuel Utilities Plan |
| | GP* | Grading Plan |
| | IP* | Installation Plan/Base Map |
| | IW* | Industrial Waste Water Plan |
| | JP* | Joint Layout Plan |
| | KP* | Staking Plan |
| | LG* | Legend |
| | NG* | Natural Gas Utilities Plan |
| | PL* | Project Location Map |
| | PR* | Profile |
| | SC | Section |
| | SH | Schedule |
| | SP | Site Plan |
| | SS* | Sanitary Sewer Plan |
| | ST* | Storm Sewer Plan |
| | TS* | Transportation Site Plan |
| | WA* | Domestic Water Plan |
| | XD* | Existing/Demolition Plan |
| *Landscape* | | |
| | DT | Detail |
| | EL | Elevation |
| | IP* | Irrigation Plan |
| | LG* | Legend |
| | LP* | Landscape Plan |
| | SC | Section |
| | SH | Schedule |
| | XD* | Existing/Demolition Plan |
| *Structural* | | |
| | 3D | Isometric/3D |
| | CP* | Column Plan |
| | DT | Detail |
| | EL | Elevation |
| | EP* | Enlarged Plan |
| | FP* | Framing Plan |
| | LG* | Legend |
| | NB* | Non-Building Structures Plan |
| | NP* | Foundation Plan |

| Table 4 (Continued) | | |
|---|---|---|
| **Discipline** | **Code** | **Definition** |
| *Structural (Continued)* | | |
| | SC | Section |
| | SH | Schedule |
| | XD* | Existing/Demolition Plan |
| *Architectural* | | |
| | 3D | Isometric/3D |
| | AC* | Area Calculations/Occupancy Plan |
| | CP* | Reflected Ceiling Plan |
| | DT | Detail |
| | EL | Elevation |
| | EP* | Enlarged Plan |
| | FP | Floor Plan |
| | LG* | Legend |
| | QP | Equipment Plan |
| | RP* | Roof Plan |
| | SC | Section |
| | SH | Schedule |
| | XD* | Existing/Demolition Plan |
| *Interiors* | | |
| | 3D | Isometric/3D |
| | DT | Detail |
| | EL | Elevation |
| | EP* | Enlarged Plan |
| | LG* | Legend |
| | QP | Equipment Plan |
| | RP* | Furniture Plan |
| | SC | Section |
| | SH | Schedule |
| | SP* | Signage Placement Plan |
| | WP* | System/Prewired Workstation Plan |
| | XD* | Existing/Demolition Plan |
| *Fire Protection* | | |
| | DG | Diagram |
| | DT | Detail |
| | FA* | Fire Alarm/Detection Plan |
| | FP* | Fire Suppression Plan |
| | LG* | Legend |

| Table 4 (Continued) | | |
|---|---|---|
| **Discipline** | **Code** | **Definition** |
| | LP* | Life Safety Plan |
| | SH | Schedule |
| | XD* | Existing/Demolition Plan |
| *Plumbing* | | |
| | DG | Diagram |
| | DT | Detail |
| | EL | Elevation |
| | EP* | Enlarged Plan |
| | LG* | Legend |
| | PP* | Piping Plan |
| | SH | Schedule |
| | XD* | Existing/Demolition Plan |
| *Mechanical* | | |
| | 3D | Isometric/3D |
| | DG | Diagram |
| | DT | Detail |
| | EL | Elevation |
| | EP* | Enlarged Plan |
| | HP* | HVAC Plan |
| | HT* | HTCW Utilities Plan |
| | LG* | Legend |
| | MD* | Machine Design Plan |
| | MH* | Material Handling Plan |
| | PP* | Piping Plan |
| | QP | Equipment Plan |
| | SC | Section |
| | SH | Schedule |
| | SP* | Specialty Piping Plan |
| | XD* | Existing/Demolition Plan |
| *Electrical* | | |
| | AL* | Airfield Lighting Plan |
| | AP* | Auxiliary Power Plan |
| | CP* | Exterior Communication Systems Plan |
| | DG | Diagram |
| | DT | Detail |
| | EU* | Electrical Utilities Plan |
| | GP* | Grounding System Plan |
| | LG* | Legend |

| Table 4 (Concluded) | | |
|---|---|---|
| **Discipline** | **Code** | **Definition** |
| *Electrical (Continued)* | | |
| | LP* | Lighting Plan |
| | PP* | Power Plan |
| | SH | Schedule |
| | SS* | Special Systems Plan |
| | XD* | Existing/Demolition Plan |
| *Telecommunications* | | |
| | DG | Diagram |
| | DT | Detail |
| | LG* | Legend |
| | SH | Schedule |
| | TP* | Telephone/Data Plan |
| | XD* | Existing/Demolition Plan |
| * = Not in NCS 2.0 | | |

These revisions would not be made on existing as-built model files, but on copies to ensure the original as-builts are not modified.

A new model file type, Existing/Demolition (XD*, where * means this type is not in NCS 2.0), has been added to the standard to allow users to make revisions to as-built files. This model file type is used to aid users in separating existing to remain items from items that will be demolished (for more information on the demolition levels/layers, see Chapter 4, "Demolition levels/layers").

**Example:** An Architect has an existing as-built Floor Plan model file for Building 1000, 2nd floor. For the current project, walls will be demolished and new walls constructed on the 2nd floor. First, a copy would be made of the original as-built file (B1000A-FPF2XX.dgn/dwg) , which would be renamed to B1000RENA-XDF2XX.dgn/dwg (B1000REN is the Project Code, A- is the Discipline Designator, XD is the Model File Type (Existing/Demolition), and F2XX are user definable characters (F2=Floor 2)). The architect would open this file and move all demolition items to the first demolition

level/layer at that level/layer's correct symbology (if phased demolition is involved, the other levels/layers would be used). When the new items are drawn, the architect would open a new model file called something like

B1000RENA-FPF2XX.dgn/dwg

(B1000REN is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F2XX are user definable characters (F2=Floor 2)). The file

B1000RENA-XDF2XX.dgn/dwg

would be referenced in with the Demolition levels/layers turned off. The architect would then use the Floor Plan active levels/layers to construct the new items for that project.

## Sheet file naming convention

The sheet file naming convention (Figure 6) has one optional field, followed by four mandatory fields. Similar to the format for model file naming, the first field is optional, while the remaining fields must be used and in the correct sequence.

The first field is entirely optional and can be used for a 0 to 20-character *Project Code* (see "Model File naming convention"). The next two characters are the *Discipline Designator with Level 2 Designator* (see Table 5). The next character is the *Sheet Type Designator* (see Table 6) followed by a two-character *Sheet Sequence Number* (01-99). The remaining three characters are user-definable.

## Table 5
## Discipline Designators with Level 2 Designators

| Discipline | Designator | Description | Content |
|---|---|---|---|
| **General** | | | |
| | G- | All General | All or any portion of subjects in the following Level 2 Designators |
| | GI | General Informational | Drawing index, code summary, symbol legend, orientation maps |
| | GC | General Contractual | Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements |
| | GR | General Resource | Photographs, soil borings |
| **Hazardous Materials** | | | |
| | H- | All Hazardous Materials | All or any portion of subjects in the following Level 2 Designators |
| | HA | Asbestos | Asbestos abatement, identification, or containment |
| | HC | Chemicals | Toxic chemicals handling, removal or storage |
| | HL | Lead | Lead piping or paint removal |
| | HP | PCB | PCB containment and removal |
| | HR | Refrigerants | Ozone depleting refrigerants |
| **Survey/Mapping** | | | |
| | V- | All Survey/Mapping | All or any portion of subjects in the following Level 2 Designators |
| | VA | Aerial Survey | |
| | VF | Field Survey | |
| | VH* | Hydrographic Survey | |
| | VI | Digital Survey | |
| | VU | Combined Utilities | |
| **Geotechnical** | | | |
| | B- | All Geotechnical | |
| **Civil Works** | | | |
| | W- | All Civil Works | |
| **Civil** | | | |
| | C- | All Civil | All or any portion of subjects in the following Level 2 Designators |
| | CD | Civil Demolition | Structure removal and site clearing |
| | CS | Civil Site | Plats, dimension control |
| | CG | Civil Grading | Excavation, grading , drainage, erosion control |
| | CP | Civil Paving | Roads, driveways, parking lots |
| | CI | Civil Improvements | Pavers, flagstone, exterior tile, furnishings, retaining walls, and water features |
| | CT | Civil Transportation | Waterways, wharves, docks, trams, railways, airfields, and people movers |
| | CU | Civil Utilities | Water, sanitary sewer, storm sewer, power, communications, fiber optic, telephone, cable television, natural gas, and steam systems |

## Table 5 (Continued)

| Discipline | Designator | Description | Content |
|---|---|---|---|
| **Landscape** | | | |
| | L- | All Landscape | All or any portion of subjects in the following Level 2 Designators |
| | LD | Landscape Demolition | Protection and removal of existing landscaping |
| | LI | Landscape Irrigation | |
| | LP | Landscape Planting | |
| **Structural** | | | |
| | S- | All Structural | All or any portion of subjects in the following Level 2 Designators |
| | SD | Structural Demolition | Protection and removal |
| | SS | Structural Site | |
| | SB | Structural Substructure | Foundations, piers, slabs, and retaining walls |
| | SF | Structural Framing | Floors and roofs |
| **Architectural** | | | |
| | A- | All Architectural | All or any portion of subjects in the following Level 2 Designators |
| | AD | Architectural Demolition | Protection and removal |
| | AS | Architectural Site | |
| | AE | Architectural Elements | General architectural |
| | AI | Architectural Interiors | |
| | AF | Architectural Finishes | |
| | AG | Architectural Graphics | |
| **Interiors** | | | |
| | I- | All Interiors | All or any portion of subjects in the following Level 2 Designators |
| | ID | Interior Demolition | |
| | IN | Interior Design | |
| | IF | Interior Furnishings | |
| | IG | Interior Graphics | Murals and visuals |
| **Equipment** | | | |
| | Q- | All Equipment | All or any portion of subjects in the following Level 2 Designators |
| | QA | Athletic Equipment | Gymnasium, exercise, aquatic, and recreational |
| | QB | Bank Equipment | Vaults, teller units, ATMs, drive-through |
| | QC | Dry Cleaning Equipment | Washers, dryers, ironing, and dry cleaning |
| | QD | Detention Equipment | Prisons and jails |
| | QE | Educational Equipment | Chalkboards, library |
| | QF | Food Service Equipment | Kitchen, bar, service, storage, and processing |
| | QH | Hospital Equipment | Medical, exam, and treatment |
| | QL | Laboratory Equipment | Science labs, planetariums, observatories |
| | QM | Maintenance Equipment | Housekeeping, window washing, and vehicle servicing |
| | QP | Parking Lot Equipment | Gates, ticket, and card access |

## Table 5 (Continued)

| Discipline | Designator | Description | Content |
|---|---|---|---|
| **Equipment (Continued)** | | | |
| | QR | Retail Equipment | Display, vending, and cash register |
| | QS | Site Equipment | Bicycle racks, benches, playgrounds |
| | QT | Theatrical Equipment | Stage, movie, rigging systems |
| | QV | Video/Photographic Equipment | Television, darkroom, and studio |
| | QY | Security Equipment | Access control and monitoring, surveillance |
| **Fire Protection** | | | |
| | F- | All Fire Protection | All or any portion of subjects in the following Level 2 Designators |
| | FA | Fire Detection and Alarm | |
| | FX | Fire Suppression | Fire extinguishing systems and equipment |
| **Plumbing** | | | |
| | P- | All Plumbing | All or any portion of subjects in the following Level 2 Designators |
| | PD | Plumbing Demolition | Protection, termination, and removal |
| | PS | Plumbing Site | Extensions and connections to Civil Utilities |
| | PP | Plumbing Piping | Piping, valves, and insulation |
| | PQ | Plumbing Equipment | Pumps and tanks |
| **Process** | | | |
| | D- | All Process | All or any portion of subjects in the following Level 2 Designators |
| | DD | Process Demolition | Protection, termination, and removal |
| | DS | Process Site | Extension and connection to civil utilities |
| | DL | Process Liquids | Liquid process systems |
| | DG | Process Gases | Gaseous process systems |
| | DP | Process Piping | Piping, valves, insulation, tanks pumps, etc. |
| | DQ | Process Equipment | Systems and equipment for thermal, electrical, materials handling, assembly and manufacturing, nuclear, power generation, chemical, refrigeration, and industrial processes |
| | DE | Process Electrical | Electrical exclusively associated with a process and not the facility |
| | DI | Process Instrumentation | Instrumentation, measurement, recorders, devices and controllers (electrical and mechanical) |
| **Mechanical** | | | |
| | M- | All Mechanical | All or any portion of subjects in the following Level 2 Designators |
| | MD | Mechanical Demolition | Protection, termination, and removal |
| | MS | Mechanical Site | Utility tunnels and piping between facilities |
| | MH | Mechanical HVAC | Ductwork, air devices, and equipment |
| | MP | Mechanical Piping | Chilled and heated water, steam |
| | MI | Mechanical Instrumentation | Instrumentation and controls |

## Table 5 (Concluded)

| Discipline | Designator | Description | Content |
|---|---|---|---|
| **Electrical** | | | |
| | E- | All Electrical | All or any portion of subjects in the following Level 2 Designators |
| | EA* | Electrical Airfield Lighting and Navaids | Visual air navigation systems |
| | ED | Electrical Demolition | Protection, termination, and removal |
| | ES | Electrical Site | Exterior electrical systems (power, lighting, telecommunications, auxiliary) |
| | EP | Electrical Interior Power | Interior power |
| | EL | Electrical Interior Lighting | Interior lighting |
| | EI | Electrical Instrumentation | Controls, relays, instrumentation, and measurement devices |
| | ET | Electrical Interior Telecommunications | Interior telecommunications (telephone, network, voice and data cables) |
| | EY | Electrical Interior Auxiliary Systems | Interior auxiliary (alarms, nurse call, security, CCTV, PA, music, clock, and program) |
| **Telecommunications** | | | |
| | T- | All Telecommunications | All or any portion of subjects in the following Level 2 Designators |
| | TD* | Telecommunications Demolition | Protection, termination, and removal |
| | TN | Data Networks | Network cabling and equipment |
| | TT | Telephone | Telephone systems, wiring, and equipment |
| **Resource** | | | |
| | R- | All Resource | All or any portion of subjects in the following Level 2 Designators |
| | RC | Resource Civil | Surveyor's information and existing civil drawings |
| | RS | Resource Structural | Existing facility structural drawings |
| | RA | Resource Architectural | Existing facility architectural drawings |
| | RM | Resource Mechanical | Existing facility mechanical drawings |
| | RE | Resource Electrical | Existing facility electrical drawings |
| **Other Disciplines** | X | | |
| **Contractor/Shop Drawings** | Z | | |
| **Operations** | O | | |
| ***= Not in NCS 2.0** | | | |
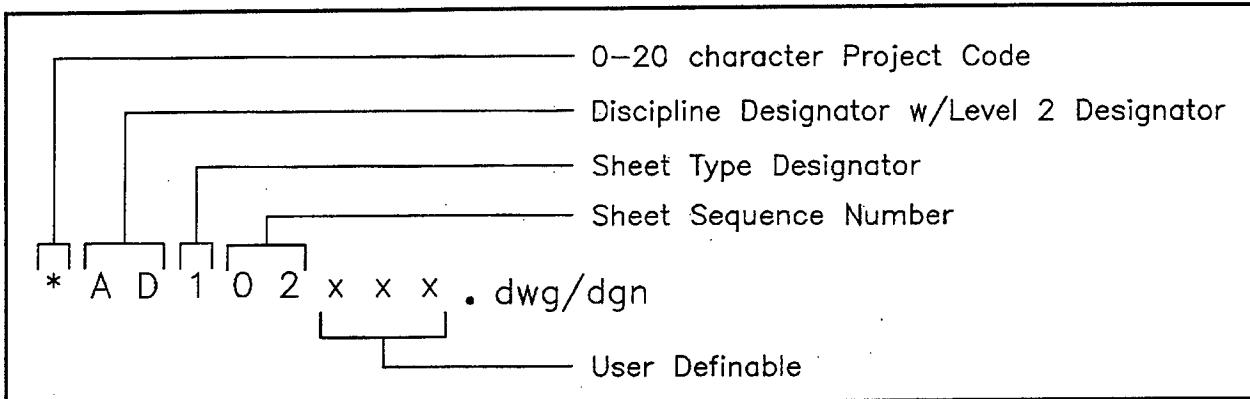
Figure 6. Sheet file naming convention

| Table 6 Sheet Type Designators | |
|---|---|
| **Sheet Type** | **Designator** |
| General (symbols legend, notes, etc.) | 0 |
| Plans (horizontal views) | 1 |
| Elevations (vertical views) | 2 |
| Sections (sectional views) | 3 |
| Large Scale Views (plans, elevations, or sections that are not details) | 4 |
| Details | 5 |
| Schedules and Diagrams | 6 |
| User Defined | 7 |
| User Defined | 8 |
| 3D Representations (isometrics, perspectives, photographs) | 9 |

**Note:** *If the sheet sequence number goes above 99 sheets for a particular discipline, the first character in the User Definable field could be used to expand the limit of sheets per discipline to 999. However, if more than 99 sheets are required for one discipline's drawings, the user might want to consider using the Level 2 Designator in the Discipline Designator to further subdivide the discipline (see Table 5).*

**Note:** *Occasionally, more than one Sheet Type (e.g., plan, elevation, detail) will be represented in one sheet file. If this is the case, the dominant sheet type determines the Sheet Type Designator.*

**Example:** The sheet file name for a project at ERDC, Building 8000, 1st floor, Quadrant B, Architectural Floor Plan, sheet sequence 02 could be:

ERDC8000A-102F1B.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, 1 is the Sheet Type Designator (Plan), 02 is the Sheet Sequence Number, and F1B is a user-definable set of characters for Floor 1, Quadrant B.

## Coordination Between Sheet File Name and Sheet Identifier

In assigning a sheet identifier (for use in the sheet identification block, reference bubbles, etc.), the user should coordinate with the name assigned to the electronic sheet file. The sheet identifier should consist of the discipline designator, sheet type designator, and the sheet sequence number (Figure 7).
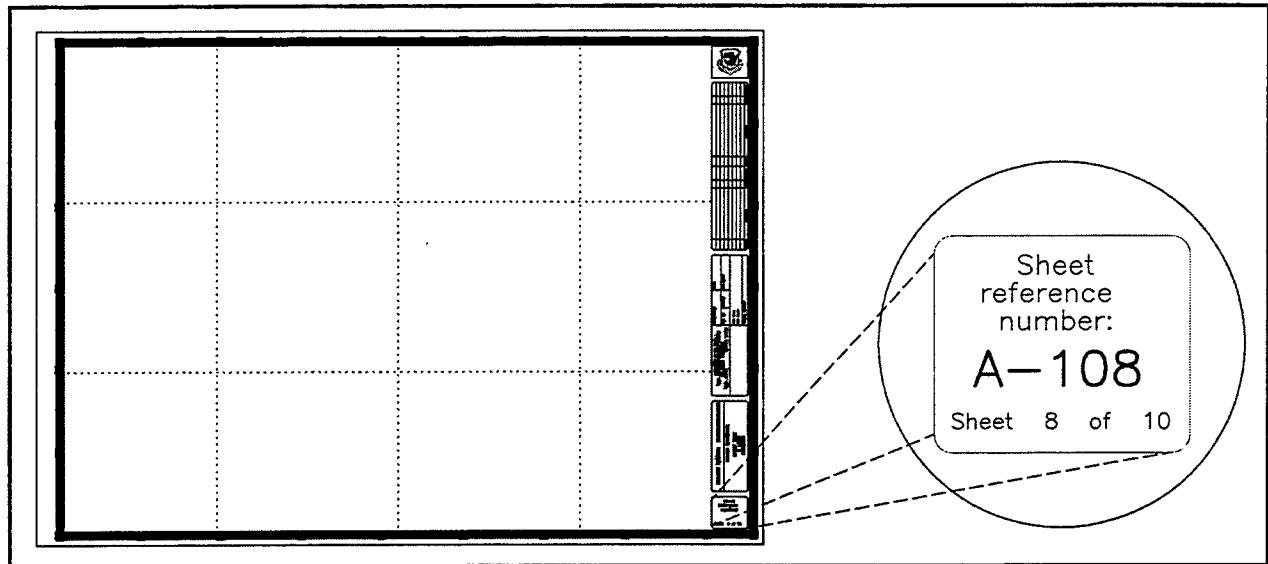
Figure 7. Typical border sheet title block with sheet identification block

As far as the sequence of the discipline designators in a drawing set, the National CAD Standard mandates that the disciplines follow the order as shown in Table 3.

# 3 Graphic Concepts

## Presentation Graphics

The first step in establishing an effective CADD standard is the development of a uniform approach to presentation graphics. Presentation graphics typically consist of drawing elements such as lines, arcs, shapes, text, and their attributes (line color, line width, and line style). This chapter presents brief overviews of the characteristics of presentation graphics and the philosophy used to standardize them.

### Line widths

Although "monotone" line work is not contractually improper, varied line widths substantially improve readability. Most commercial CADD systems provide an extensive variety of line widths. However, for the majority of A/E/C drawings, the five line widths defined in Table 7, with the optional 1.00 mm, 1.40 mm, and 2.00 mm lines, are considered sufficient and should not be expanded unless an appreciable improvement in drawing clarity or contrast can be realized. The following are typical usages for the line widths shown in Table 7:

- Fine (0.18 mm). Fine lines should be used sparingly, mostly for poche/patterning (this line thickness typically does not reproduce well in blue-line format and/or in photocopies).

- Thin (0.25 mm). Thin lines should be used for depicting dimension lines, dimension leader/witness lines, note leader lines, line terminators (arrowheads, dots, slashes), phantom lines, hidden lines, center lines, long break lines, schedule grid lines, and object lines seen at a distance.

| Table 7 Comparison of Line Widths | | | | | |
|---|---|---|---|---|---|
| Line Thickness | Technical Pen Designation[1] | mm | in. | MicroStation Line Weight[2] | Line Weight Example |
| Fine | 0000 | 0.18 | 0.007 | wt = 0 | ———————— |
| Thin | 000 | 0.25 | 0.010 | wt = 1 | ———————— |
| Medium | 0 | 0.35 | 0.014 | wt = 2 | ———————— |
| Wide | 1 | 0.50 | 0.020 | wt = 3 | ———————— |
| Extra Wide | 2.5 | 0.70 | 0.028 | wt = 5 | ———————— |
| Option 1 | 3.5 | 1.00 | 0.040 | wt = 7 | ———————— |
| Option 2 [3] | n/a | 1.40 | 0.055 | wt = 10 | ———————— |
| Option 3 [3] | n/a | 2.00 | 0.079 | wt = 15 | ———————— |

[1] Technical pen designation derived from Rapidograph and Rotring pen sizes.
[2] The weight of MicroStation lines remains constant when plotted, no matter if the design is scaled up or down.
[3] Pens not standard for ink pen plotters.

- Medium (0.35 mm). Medium lines should be used for depicting minor object lines, dimension text, text for notes/callouts, and schedule text.

- Wide (0.50 mm). Wide lines should be used for major object lines, cut lines, section cutting plane lines, and titles.

- Extra wide (0.70 mm). Extra wide lines should be used for minor title underlining, schedule outlines, large titles, and object lines requiring special emphasis. For very large scale details drawn at 3 in. = 1 ft-0 in. or larger, the extra wide width should be used for the object lines. Extra wide widths are also appropriate for use as an elevation grade line, building footprint, or top of grade lines on section/foundation details.

- Option 1 (1.00 mm). This line weight should be used for major title underlining and separating portions of drawings.

- Option 2 (1.40 mm). This line weight should be used for border sheet outlines and cover sheet line work, and as an option for the designer as required.

- Option 3 (2.00 mm). This line weight should be used for border sheet outlines and cover sheet line work and as an option for the designer as required.

## Line types/styles

The line types/styles selected for this standard are listed in Table 8. Only line IDs 0, 2, 7 and 11 are included in ISO 128 (ISO 1982). The CGTC has created line style files for MicroStation and AutoCAD (called tsaec.rsc and tsaec.lin, respectively) which include the line styles in Table 9, as well as additional discipline line styles. Appendix D contains additional line styles utilized in the standard. These files are available on the Release 2.0 CD, as well as on the CGTC's Internet site at *tsc.wes.army.mil*.

| Table 8 Standard Line Types/Styles | | | | |
|---|---|---|---|---|
| ID | Description | Example | MicroStation Designator | AutoCAD Designator |
| 0 | Continuous | | 0 | Continuous |
| 1 | Dotted | | 1 | ACAD_ISO07W100 |
| 2 | Dashed | | 2 | ACAD_ISO02W100 |
| 3 | Dashed spaced | | 3 | ACAD_ISO03W100 |
| 4 | Dashed dotted | | 4 | ACAD_ISO10W100 |
| 6 | Dashed double-dotted | | 6 | ACAD_ISO12W100 |
| 10 | Dashed triple-dotted | | _[1] | ACAD_ISO14W100 |
| 7 | Chain | | 7 | ACAD_ISO08W100 |
| 11 | Chain double-dashed | | _[1] | ACAD_ISO09W100 |
| [1] This line style is not found in the default MicroStation line style resource file. | | | | |

## Line color

The primary reason to use color in CADD drawings is to improve the clarity of the drawing on a computer monitor. The variety of colors available in a CADD application depends on the capabilities of the computer monitor and its video card. Today, most systems are capable of displaying from 16 to 256 colors. Based on the limitations of monitor color display capabilities and differing CADD system plotting methods, this manual recommends that all A/E/C drawings be created using the basic colors presented in Table 9 whenever possible.

**Note:** *The recommended colors are best viewed on a monitor with a black background.*

Appendix C contains a 256-color map for the AutoCAD and MicroStation color palettes. The table maps AutoCAD's default color palette to MicroStation's default color palette. The color table is provided for those users who require more colors than the eight recommended by this standard.

## Screening

Screened images are created through a process in which the density and pattern of black and white dots are varied to simulate different shades of gray. Varying the intensity of gray scales allows users to distinguish different aspects of a drawing when it is plotted. For example, an area on a site designated for demolition can be assigned a color that has been assigned a screening percentage. When plotted, the area will be shown at a lighter shade compared with other elements in the drawing. This will allow the contractor to immediately identify the demolition area on the drawing.

Table 10 lists colors recommended to be used for screening along with a recommended screening percentage. Using Table 10, Micro-Station users can edit a plotter driver, using a text editor, to assign a screening percentage to the specific colors (see the MicroStation user's manuals for information on working with plotter/printer drivers).

| Table 9 Screen Color Comparison | | | | | |
|---|---|---|---|---|---|
| | Color Number | | Ratios of RGB, % | | |
| Color | AutoCAD | MicroStation | Red | Green | Blue |
| Blue | 5 | 1 | 0 | 0 | 255 |
| Gray | 8 | 9 | 128 | 128 | 128 |
| Green | 3 | 2 | 0 | 255 | 0 |
| Red | 1 | 3 | 255 | 0 | 0 |
| Yellow | 2 | 4 | 255 | 255 | 0 |
| Magenta | 6 | 5 | 255 | 0 | 255 |
| Cyan | 4 | 7 | 0 | 255 | 255 |
| White | 7 | 0 | 255 | 255 | 255 |
| Note: Color numbers for AutoCAD and MicroStation were taken from default color tables. | | | | | |

## Table 10
## Screened Colors

| AutoCAD | | | | MicroStation | | | Gray Scale Ratios (RGB), percent | | |
|---|---|---|---|---|---|---|---|---|---|
| Color No. | Line Width mm | Line Width in. | Screen percent | Color No. | Line Weight | Screen percent | Red | Green | Blue |
| 10 | 0.18 | 0.007 | 10 | 10 | 0 | 10 | 230 | 230 | 230 |
| 11 | 0.25 | 0.010 | 10 | 19 | 1 | 10 | 230 | 230 | 230 |
| 12 | 0.35 | 0.014 | 10 | 27 | 2 | 10 | 230 | 230 | 230 |
| 13 | 0.50 | 0.020 | 10 | 35 | 3 | 10 | 230 | 230 | 230 |
| 14 | 0.70 | 0.028 | 10 | 43 | 5 | 10 | 230 | 230 | 230 |
| 15 | 1.00 | 0.039 | 10 | 51 | 7 | 10 | 230 | 230 | 230 |
| 16 | 1.40 | 0.055 | 10 | 59 | 10 | 10 | 230 | 230 | 230 |
| 19 | 2.00 | 0.079 | 10 | 83 | 15 | 10 | 230 | 230 | 230 |
| 50 | 0.18 | 0.007 | 20 | 20 | 0 | 20 | 204 | 204 | 204 |
| 51 | 0.25 | 0.010 | 20 | 28 | 1 | 20 | 204 | 204 | 204 |
| 52 | 0.35 | 0.014 | 20 | 36 | 2 | 20 | 204 | 204 | 204 |
| 53 | 0.50 | 0.020 | 20 | 44 | 3 | 20 | 204 | 204 | 204 |
| 54 | 0.70 | 0.028 | 20 | 52 | 5 | 20 | 204 | 204 | 204 |
| 55 | 1.00 | 0.039 | 20 | 60 | 7 | 20 | 204 | 204 | 204 |
| 56 | 1.40 | 0.055 | 20 | 68 | 10 | 20 | 204 | 204 | 204 |
| 59 | 2.00 | 0.079 | 20 | 92 | 15 | 20 | 204 | 204 | 204 |
| 90 | 0.18 | 0.007 | 30 | 82 | 0 | 30 | 179 | 179 | 179 |
| 91 | 0.25 | 0.010 | 30 | 106 | 1 | 30 | 179 | 179 | 179 |
| 92 | 0.35 | 0.014 | 30 | 92 | 2 | 30 | 179 | 179 | 179 |
| 93 | 0.50 | 0.020 | 30 | 122 | 3 | 30 | 179 | 179 | 179 |
| 94 | 0.70 | 0.028 | 30 | 114 | 5 | 30 | 179 | 179 | 179 |
| 95 | 1.00 | 0.039 | 30 | 138 | 7 | 30 | 179 | 179 | 179 |
| 96 | 1.40 | 0.055 | 30 | 130 | 10 | 30 | 179 | 179 | 179 |
| 99 | 2.00 | 0.079 | 30 | 170 | 15 | 30 | 179 | 179 | 179 |
| 130 | 0.18 | 0.007 | 40 | 87 | 0 | 40 | 153 | 153 | 153 |
| 131 | 0.25 | 0.010 | 40 | 95 | 1 | 40 | 153 | 153 | 153 |
| 132 | 0.35 | 0.014 | 40 | 103 | 2 | 40 | 153 | 153 | 153 |
| 133 | 0.50 | 0.020 | 40 | 111 | 3 | 40 | 153 | 153 | 153 |
| 134 | 0.70 | 0.028 | 40 | 119 | 5 | 40 | 153 | 153 | 153 |
| 135 | 1.00 | 0.039 | 40 | 127 | 7 | 40 | 153 | 153 | 153 |
| 136 | 1.40 | 0.055 | 40 | 135 | 10 | 40 | 153 | 153 | 153 |
| 139 | 2.00 | 0.079 | 40 | 159 | 15 | 40 | 153 | 153 | 153 |
| 170 | 0.18 | 0.007 | 50 | 97 | 0 | 50 | 128 | 128 | 128 |
| 171 | 0.25 | 0.010 | 50 | 105 | 1 | 50 | 128 | 128 | 128 |
| 172 | 0.35 | 0.014 | 50 | 113 | 2 | 50 | 128 | 128 | 128 |
| 173 | 0.50 | 0.020 | 50 | 121 | 3 | 50 | 128 | 128 | 128 |
| 174 | 0.70 | 0.028 | 50 | 129 | 5 | 50 | 128 | 128 | 128 |
| 175 | 1.00 | 0.039 | 50 | 137 | 7 | 50 | 128 | 128 | 128 |
| 176 | 1.40 | 0.055 | 50 | 145 | 10 | 50 | 128 | 128 | 128 |
| 179 | 2.00 | 0.079 | 50 | 169 | 15 | 50 | 128 | 128 | 128 |
| 210 | 0.18 | 0.007 | 50 | 85 | 0 | 50 | 128 | 128 | 128 |
| 211 | 0.25 | 0.010 | 50 | 109 | 1 | 50 | 128 | 128 | 128 |
| 212 | 0.35 | 0.014 | 50 | 101 | 2 | 50 | 128 | 128 | 128 |
| 213 | 0.50 | 0.020 | 50 | 125 | 3 | 50 | 128 | 128 | 128 |
| 214 | 0.70 | 0.028 | 50 | 117 | 5 | 50 | 128 | 128 | 128 |
| 215 | 1.00 | 0.039 | 50 | 141 | 7 | 50 | 128 | 128 | 128 |
| 216 | 1.40 | 0.055 | 50 | 133 | 10 | 50 | 128 | 128 | 128 |
| 219 | 2.00 | 0.079 | 50 | 173 | 15 | 50 | 128 | 128 | 128 |
| 250 | 0.25 | 0.010 | 50 | 8 | 1 | 50 | 128 | 128 | 128 |
| 251 | 0.35 | 0.014 | 50 | 200 | 2 | 50 | 128 | 128 | 128 |
| 252 | 0.50 | 0.020 | 50 | 168 | 3 | 50 | 128 | 128 | 128 |
| 253 | 0.70 | 0.028 | 50 | 120 | 5 | 50 | 128 | 128 | 128 |
| 254 | 1.00 | 0.039 | 50 | 56 | 7 | 50 | 128 | 128 | 128 |
| 255 | 2.00 | 0.079 | 50 | 24 | 15 | 50 | 128 | 128 | 128 |

AutoCAD users must specify requirements for screening according to the output device used. Due to the number of output devices AutoCAD supports, users should consult the help documentation provided within AutoCAD for information on assigning recommended screening percentages.

## Text styles/fonts

Contrasting text styles (or fonts) are used within a drawing to delineate types of information. In most A/E/C drawings, the five fonts shown in Table 11 should be sufficient.

- Monotext font. This font creates text characters that are evenly spaced. Monotext font should be used where text fields need to be aligned such as in schedules or, in some cases, title blocks. In AutoCAD, use the monotxt font and in MicroStation use Font #3.

- Proportional font. This font creates text where the characters are proportionally spaced. It is appropriate for general notes, labels, or title blocks. In AutoCAD, use the romans (Roman Simplex) font with a width factor of 0.8. In MicroStation use Font #1.

- Slanted font. A slanted font is used where text needs to be easily distinguished from other text. This font can be created in AutoCAD by using the romans font with the Obliquing Angle set to 21.8 deg to achieve the American Standard slope of 2 in 5 (68.2 deg). In MicroStation use Font #23.

- Filled font. Filled fonts are used primarily for titles and on cover sheets. For AutoCAD, the recommended font is the swiss TrueType font (Note: The TEXTFILL system variable needs to be set to "1"). MicroStation users should use Font #43 (the Microsoft arialbd.ttf font file can be used as an alternate text style for the filled font).

- Outline font. When a pen plotter is used for final output, the outline font is used as a substitute for filled fonts for major titles such as cover sheet information to save plotting time. For AutoCAD, the recommended font is the sasb (Sans Serif-bold) PostScript font. For MicroStation, use Font #42.

## Plotting

Printers and plotters are controlled by files called pen tables or feature tables. These files (tables) convert thicknesses and/or color in an electronic file to line thicknesses on a paper drawing.

This manual standardizes presentation graphics as they relate to electronic drawing files (screen display) and not the final printed or plotted paper drawing. By employing pen tables, each agency can ensure that consistent drawings are produced from an electronic file regardless of the type of printer or plotter used. It is the responsibility of each field activity to develop pen tables based on the printer/plotter used at that activity.

# Border Sheets

## Sheet sizes

Typical A/E/C projects (contract documents) will be prepared on A1 sheets in accordance with the ISO sheet size shown in Table 12, which also shows American National Standards Institute (ANSI) equivalents (American Society of Mechanical Engineers (ASME) Y14.1 (1995)).

The ISO A0 sheet is recommended for large maps (i.e., installation master plans and drawings for civil works projects).

## Table 11
## Comparison of Font Types

| MicroStation | AutoCAD |
|---|---|
| **Monotext font**<br>**(Font #3)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXYZ<br>abcdefghijklmnopqrst uvwxyz | **Monotext font**<br>**(monotxt)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXYZ<br>abcdefghijklmnopqrst uvwxyz |
| **Proportional font**<br>**(Font #1)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXYZ<br>abcdefghijklmnopqrst uvwxyz | **Proportional font**<br>**(romans)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXYZ<br>abcdefghijklmnopqrst uvwxyz |
| **Slanted font**<br>**(Font #23)**<br><br>*ABCDEFGHIJKLMNOPQRST UVWXYZ*<br>*abcdefghijklmnopqrst uvwxyz* | **Slanted font**<br>**(romans, obliquing angle = 21.8)**<br><br>*ABCDEFGHIJKLMNOPQRST UVWXYZ*<br>*abcdefghijklmnopqrst uvwxyz* |
| **Filled font**<br>**(Font #43)**<br><br>**ABCDEFGHIJKLMNOPQRST UVWXYZ**<br>**abcdefghijklmnopqrst uvwxyz** | **Filled font**<br>**(swiss)**<br><br>**ABCDEFGHIJKLMNOPQRST UVWXYZ**<br>**abcdefghijklmnopqrst uvwxyz** |
| **Outline font**<br>**(Font #42)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXZY<br>abcdefghijklmnopqrst uvwxyz | **Outline font**<br>**(sasb)**<br><br>ABCDEFGHIJKLMNOPQRST UVWXZY<br>abcdefghijklmnopqrst uvwxyz |

| Table 12 ISO, ANSI, and Architectural Sheet Size Comparison | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Width | | Length | | ANSI Equivalent | | Architectural Equivalent | |
| ISO Designation | mm | in. | mm | in. | Letter | in. | Letter | in. |
| NA | NA | NA | NA | NA | F | 28.0 x 40.0 | F | 30.0 x 42.0 |
| A0 | 841 | 33.11 | 1189 | 46.81 | E | 34.0 x 44.0 | E | 36.0 x 48.0 |
| A1 | 594 | 23.39 | 841 | 33.11 | D | 22.0 x 34.0 | D | 24.0 x 36.0 |
| A2 | 420 | 16.54 | 594 | 23.39 | C | 17.0 x 22.0 | C | 18.0 x 24.0 |
| A3 | 297 | 11.69 | 420 | 16.54 | B | 11.0 x 17.0 | B | 12.0 x 18.0 |
| A4 | 210 | 8.27 | 297 | 11.69 | A | 8.5 x 11.0 | A | 9.0 x 12.0 |

**Note:** *Users plotting A1 size drawings on ANSI D-size paper should reduce the width of the A1 border from 594 mm (23.39 in.) to 559 mm (22.0 in.). The length can remain the same. This revised border will fit on an ANSI D-size sheet (22 by 34 in.) and can be reproduced on standard office photocopiers.*

## Title block

The CGTC recommends the use of a vertical title block placed in the right-hand margin of the border sheet as shown in Figure 8. Use of the vertical title block provides the most usable drawing space on a sheet. The vertical title block also ensures that the most prevalent and pertinent information remains at the bottom right of the sheet. In compliance with the *Uniform Drawing System* (CSI 2001), title block data will include the following:

- Designer identification block
- Issue block
- Management block
- Project identification block/sheet title block
- Sheet identification block

**Note:** *Local standards may modify the content of the title block but should not alter its size or configuration if possible. See the* Uniform Drawing System *for additional recommendations.*

**Designer identification block.** The designer identification block (Figure 9) contains the logo or name of the agency that designed the sheet. This space could also be expanded (by reducing the size of the issue block) to accommodate professional seals when required.

**Issue block.** The issue block (Figure 10) contains a history of revisions, addenda, and/or clarifications to the sheet. The first entry should be placed on the lower left-hand line of the issue block and subsequent entries should be made above it.

**Management block.** The management block (Figure 11) contains information about the designer, reviewer, and submitter. This block can also be used to maintain filing information about the drawing, such as the file name, plot scale, and drawing code (this information is sometimes plotted outside the drawing sheet cut line). If an A-E has developed the drawings, there is room for information about the firm in the lower left portion of the block.
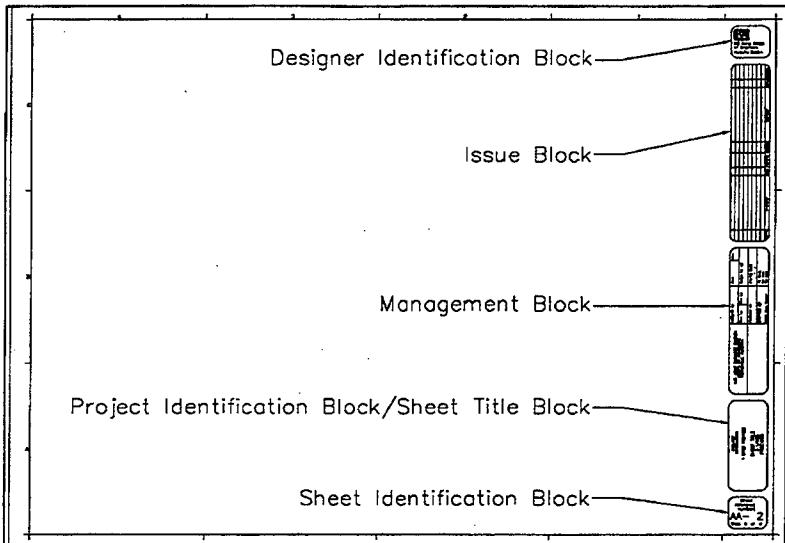
Figure 8. Sample metric drawing sheet with vertical title block
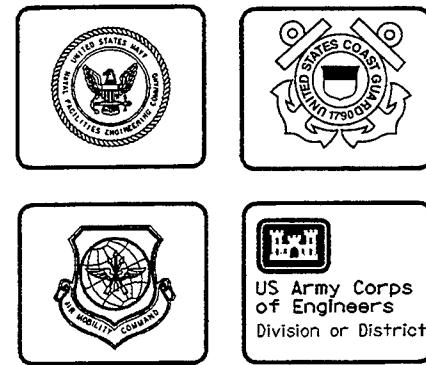


Figure 9. Designer identification block (typ.)



Figure 10. Issue block (typ.)



| U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS HUNTSVILLE, ALABAMA | Designed by: | | Date: | Rev: |
|---|---|---|---|---|
| | Dwn by: | Ckd by: | Design file no. | |
| | Reviewed by: | | Drawing code: | |
| | Submitted by: | | File name: Plot date: Dwg scale: | |

Figure 11. Management block (typ.)

**Project identification block/sheet title block.** The project identification block/sheet title block (Figure 12) contains two sets of information. First, the project name is identified, possibly with the location or phase of the project identified. If small enough, a project logo can be presented in this block. The second set of information contains a description of the content of the sheet (e.g., Architectural Floor Plan). If more than one type of information is presented on the sheet (i.e., plans, schedules, details), the most important information is identified.

**Sheet identification block.** The sheet identification block (Figure 13) contains the sheet identifier. This sheet identifier is composed of the discipline designator, the sheet type designator, and the sheet sequence number described in the section, "Electronic Drawing File Naming Conventions" (Chapter 2). The "number of sheets" listing is optional and can contain either the total number of sheets for the entire project drawing set or the number of sheets for that particular discipline designator.

## Drawing Scales

Typical drawing scales for both SI and inch-pound measurements are indicated in Table 13.

The A/E/C CADD Standard recommends text heights for these scales in accordance with Leroy lettering sizes. Table 14 lists recommended text sizes using inch-pound scales. Table 15 lists recommended text sizes using metric scales.

## Dimensioning in Metric (SI)

Methodologies for dimensioning metric (SI) drawings are based upon the recommendations of the Construction Metrication Council of the National Institute of Building Sciences (NIBS), Washington, DC. These recommendations comply with the American Society for Testing and Materials (ASTM) E 621-94, "Standard Practice for the Use of Metric (SI) Units in Building Design and Construction" (ASTM 1999).

### Millimeters

The preferred unit of measure for most A/E/C work is millimeters. Unit notations are unnecessary and should not be used. The dimension is provided as a whole number as shown in Figure 14. Also, a note should be added to the drawing stating, "All dimensions and/or dimensions shown in callouts/notes are in millimeters unless otherwise noted."

PROJECT
INFORMATION

4 LINES PROVIDED

SHEET TITLE
3 LINES
PROVIDED
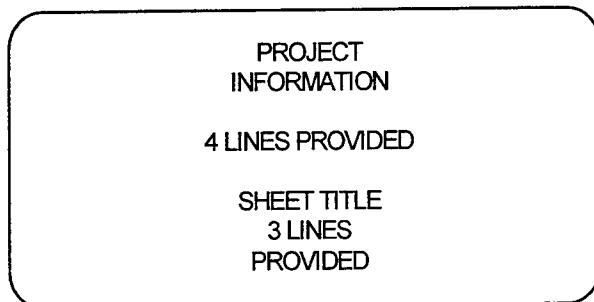
Figure 12. Project identification block/sheet title block

Sheet
Reference
Number:

**X-000**

Sheet 0 of 0
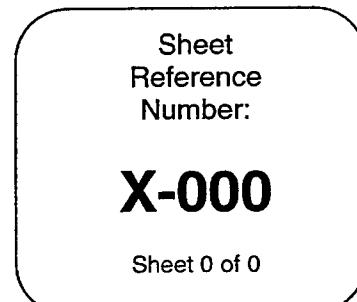
Figure 13. Sheet identification block

| Table 13 Drawing Scales | | |
|---|---|---|
| **Drawing Type** | **Metric** | **Inch-Pound** |
| Site plans | 1:200 | 1" = 20' - 0" |
| | 1:400 | 1" = 30' - 0" |
| | 1:500 | 1" = 40' - 0" |
| | 1:600 | 1" = 50' - 0" |
| | 1:700 | 1" = 60' - 0" |
| | 1:1000 | 1" = 100' - 0" |
| | 1:2000 | 1" = 200' - 0" |
| | 1:5000 | 1" = 400' - 0" |
| | 1:6000 | 1" = 500' - 0" |
| | 1:10000 | 1" = 1000' - 0" |
| | 1:20000 | 1" = 2000' - 0" |
| Floor plans | 1:50 | 1/4" = 1' - 0" |
| | 1:100 | 1/8" = 1' - 0" |
| | 1:200 | 1/16" = 1' - 0" |
| Roof plan | 1:200 | 1/16" = 1' - 0" |
| Exterior elevations | 1:100 | 1/8" = 1' - 0" |
| | 1:200 | 1/16" = 1' - 0" |
| Interior elevations | 1:50 | 1/4" = 1' - 0" |
| | 1:100 | 1/8" = 1' - 0" |
| Cross sections | 1:50 | 1/4" = 1' - 0" |
| | 1:100 | 1/8" = 1' - 0" |
| | 1:200 | 1/16" = 1' - 0" |
| Wall sections | 1:20 | 1/2" or 3/4" = 1' - 0" |
| Stair details | 1:10 | 1" or 1-1/2" = 1' - 0" |
| Details | 1:5 | 3" = 1' - 0" |
| | 1:10 | 1" or 1-1/2" = 1' - 0" |

# Table 14

## Inch-pound Text Sizes

| Leroy Lettering Sizes | 60 | 80 | 100 | 120 | 140 | 175 | 200 | 240 | 290 | 350 | 425 | 500 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Decimal Inch Equivalents | 0.060 | 0.080 | 0.100 | 0.120 | 0.140 | 0.175 | 0.200 | 0.240 | 0.290 | 0.350 | 0.425 | 0.500 | 1.000 |
| **Text Sizes In Feet And Inches** | | | | | | | | | | | | | |
| Drawing Scale = 1" = 2000'-0" | 120:0 | 160:0 | 200:0 | 240:0 | 280:0 | 350:0 | 400:0 | 480:0 | 580:0 | 700:0 | 850:0 | 1000:0 | 2000:0 |
| Drawing Scale = 1" = 1000'-0" | 60:0 | 80:0 | 100:0 | 120:0 | 140:0 | 175:0 | 200:0 | 240:0 | 290:0 | 350:0 | 425:0 | 500:0 | 1000:0 |
| Drawing Scale = 1" = 500'-0" | 30:0 | 40:0 | 50:0 | 60:0 | 70:0 | 87:6 | 100:0 | 120:0 | 145:0 | 175:0 | 212:6 | 250:0 | 500:0 |
| Drawing Scale = 1" = 400'-0" | 24:0 | 32:0 | 40:0 | 48:0 | 56:0 | 70:0 | 80:0 | 96:0 | 116:0 | 140:0 | 170:0 | 200:0 | 400:0 |
| Drawing Scale = 1" = 200'-0" | 12:0 | 16:0 | 20:0 | 24:0 | 28:0 | 35:0 | 40:0 | 48:0 | 58:0 | 70:0 | 85:0 | 100:0 | 200:0 |
| Drawing Scale = 1" = 100'-0" | 6:0 | 8:0 | 10:0 | 12:0 | 14:0 | 17:6 | 20:0 | 24:0 | 29:0 | 35:0 | 42:6 | 50:0 | 100:0 |
| Drawing Scale = 1" = 60'-0" | 3:7 | 4:10 | 6:0 | 7:2 | 8:5 | 10:6 | 12:0 | 14:5 | 17:5 | 21:0 | 25:6 | 30:0 | 60:0 |
| Drawing Scale = 1" = 50'-0" | 3:0 | 4:0 | 5:0 | 6:0 | 7:0 | 8:9 | 10:0 | 12:0 | 14:6 | 17:6 | 21:3 | 25:0 | 50:0 |
| Drawing Scale = 1" = 40'-0" | 2:5 | 3:2 | 4:0 | 5:0 | 5:8 | 7:0 | 8:0 | 9:8 | 11:8 | 14:0 | 17:0 | 20:0 | 40:0 |
| Drawing Scale = 1" = 30'-0" | 1:10 | 2:5 | 3:0 | 3:7 | 4:2 | 5:3 | 6:0 | 7:2 | 8:8 | 10:6 | 12:9 | 15:0 | 30:0 |
| Drawing Scale = 1" = 20'-0" | 1:2 | 1:7 | 2:0 | 2:5 | 2:10 | 3:6 | 4:0 | 4:10 | 5:10 | 7:0 | 8:6 | 10:0 | 20:0 |
| Drawing Scale = 3" = 1'-0" | :0.2 | :0.3 | :0.4 | :0.5 | :0.6 | :0.7 | :0.8 | :1 | :1.2 | :1.4 | :1.7 | :2 | :4 |
| Drawing Scale = 1-1/2" = 1'-0" | :0.5 | :0.6 | :0.8 | :1 | :1.1 | :1.4 | :1.6 | :2 | :2.3 | :2.8 | :3.4 | :4 | :8 |
| Drawing Scale = 1" = 1'-0" | :0.7 | :1 | :1.2 | :1.5 | :1.7 | :2.1 | :2.4 | :2.8 | :3.5 | :4.2 | :5 | :6 | 1:0 |
| Drawing Scale = 3/4" = 1'-0" | :1 | :1.3 | :1.6 | :2 | :2.2 | :2.8 | :3.2 | :3.8 | :4.6 | :5.6 | :7 | :8 | 1:4 |
| Drawing Scale = 1/2" = 1'-0" | :1.5 | :2 | :2.4 | :3 | :3.4 | :4.2 | :4.8 | :5.8 | :7 | :8.4 | :10 | 1:0 | 2:0 |
| Drawing Scale = 3/8" = 1'-0" | :2 | :2.5 | :3 | :4 | :4.5 | :5.6 | :6.4 | :7.7 | :9.3 | :11 | 1:1 | 1:4 | 2:8 |
| Drawing Scale = 1/4" = 1'-0" | :3 | :4 | :5 | :6 | :7 | :8.4 | :9.6 | 1:0 | 1:2 | 1:5 | 1:8 | 2:0 | 4:0 |
| Drawing Scale = 1/8" = 1'-0" | :6 | :8 | :10 | 1:0 | 1:1 | 1:5 | 1:7 | 1:11 | 2:4 | 2:10 | 3:5 | 4:0 | 8:0 |
| Drawing Scale = 3/32" = 1'-0" | :8 | :10 | 1:0 | 1:3 | 1:6 | 1:10 | 2:1 | 2:6 | 3:1 | 3:8 | 4:6 | 5:4 | 10:8 |
| Drawing Scale = 1/16" = 1'-0" | 1:0 | 1:3 | 1:7 | 2:0 | 2:3 | 2:10 | 3:2 | 3:10 | 4:8 | 5:7 | 6:10 | 8:0 | 16:0 |
| Drawing Scale = 1/32" = 1'-0" | 2:0 | 2:6 | 3:2 | 3:10 | 4:6 | 5:7 | 6:5 | 7:8 | 9:4 | 11:2 | 13:7 | 16:0 | 32:0 |
| Drawing Scale = FULL | :0.060 | :0.080 | :0.100 | :0.120 | :0.140 | :0.175 | :0.200 | :0.240 | :0.290 | :0.350 | :0.425 | :0.500 | 1:000 |

# Table 15
## Metric Text Sizes

| Leroy Lettering Sizes | | 60 | 80 | 100 | 120 | 140 | 175 | 200 | 240 | 290 | 350 | 425 | 500 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Millimeter Approximates | | 1.5 | 2 | 2.5 | 3 | 3.5 | 4.5 | 5 | 6 | 7.5 | 9 | 11 | 12 | 25 |
| | | Text Sizes In Millimeters | | | | | | | | | | | | |
| Drawing Scale = | 1:20000 | 30000 | 40000 | 50000 | 60000 | 70000 | 90000 | 100000 | 120000 | 150000 | 180000 | 220000 | 240000 | 500000 |
| Drawing Scale = | 1:10000 | 15000 | 20000 | 25000 | 30000 | 35000 | 45000 | 50000 | 60000 | 75000 | 90000 | 110000 | 120000 | 250000 |
| Drawing Scale = | 1:6000 | 9000 | 12000 | 15000 | 18000 | 21000 | 27000 | 30000 | 36000 | 45000 | 54000 | 66000 | 72000 | 150000 |
| Drawing Scale = | 1:5000 | 7500 | 10000 | 12500 | 15000 | 17500 | 22500 | 25000 | 30000 | 37500 | 45000 | 55000 | 60000 | 125000 |
| Drawing Scale = | 1:2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 9000 | 10000 | 12000 | 15000 | 18000 | 22000 | 24000 | 50000 |
| Drawing Scale = | 1:1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4500 | 5000 | 6000 | 7500 | 9000 | 11000 | 12000 | 25000 |
| Drawing Scale = | 1:700 | 1050 | 1400 | 1750 | 2100 | 2450 | 3150 | 3500 | 4200 | 5250 | 6300 | 7700 | 8400 | 17500 |
| Drawing Scale = | 1:600 | 900 | 1200 | 1500 | 1800 | 2100 | 2700 | 3000 | 3600 | 4500 | 5400 | 6600 | 7200 | 15000 |
| Drawing Scale = | 1:500 | 750 | 1000 | 1250 | 1500 | 1750 | 2250 | 2500 | 3000 | 3750 | 4500 | 5500 | 6000 | 12500 |
| Drawing Scale = | 1:400 | 600 | 800 | 1000 | 1200 | 1400 | 1800 | 2000 | 2400 | 3000 | 3600 | 4400 | 4800 | 10000 |
| Drawing Scale = | 1:200 | 300 | 400 | 500 | 600 | 700 | 900 | 1000 | 1200 | 1500 | 1800 | 2200 | 2400 | 5000 |
| Drawing Scale = | 1:100 | 150 | 200 | 250 | 300 | 350 | 450 | 500 | 600 | 750 | 900 | 1100 | 1200 | 2500 |
| Drawing Scale = | 1:50 | 75 | 100 | 125 | 150 | 175 | 225 | 250 | 300 | 375 | 450 | 550 | 600 | 1250 |
| Drawing Scale = | 1:20 | 30 | 40 | 50 | 60 | 70 | 90 | 100 | 120 | 150 | 180 | 220 | 240 | 500 |
| Drawing Scale = | 1:10 | 15 | 20 | 25 | 30 | 35 | 45 | 50 | 60 | 75 | 90 | 110 | 120 | 250 |
| Drawing Scale = | 1:5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 22.5 | 25 | 30 | 37.5 | 45 | 55 | 60 | 125 |
| Drawing Scale = | 1:2.5 | 3.75 | 5 | 6.25 | 7.5 | 8.75 | 11.25 | 12.5 | 15 | 18.75 | 22.5 | 27.5 | 30 | 62.5 |
| Drawing Scale = | FULL | 1.5 | 2 | 2.5 | 3 | 3.5 | 4.5 | 5 | 6 | 7.5 | 9 | 11 | 12 | 25 |
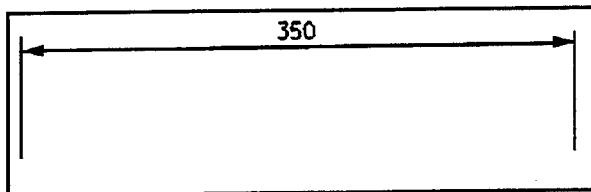
Figure 14. Dimension in millimeters. Always shown as a whole number

When meter measurements are included on the same sheet, the meter dimension is provided as a real number taken to three places past the decimal point (Figure 15). Again, unit notations are unnecessary.
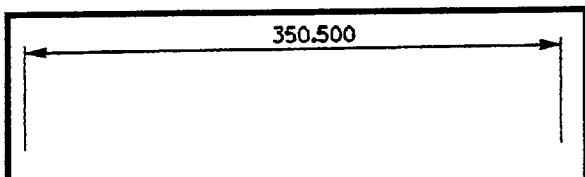


Figure 15. Dimension in meters. Always shown as a real number (with decimal)

**Note:** *In circumstances where very small dimensions are used (e.g., machine details), it is permissible to use real numbers for millimeter dimensions. A note should be placed on the detail regarding this fact.*

## Meters

For site plans or other drawings drawn to scales over 1:200, the unit of measure is typically meters. Where greater accuracy is required, show dimensions to three decimal places (Figure 15). A note should be added to the drawing stating, "All dimensions and/or dimensions shown in callouts/notes are in meters unless otherwise noted."

## Large units of measure

Commas shall not be used when providing large units of measure; instead, a space replaces the traditional comma in numbers containing

five or more digits (e.g., the number 45,000 is displayed as 45 000). In numbers containing four digits, no space is used (e.g., 5000). Both methods are shown in Figure 16.
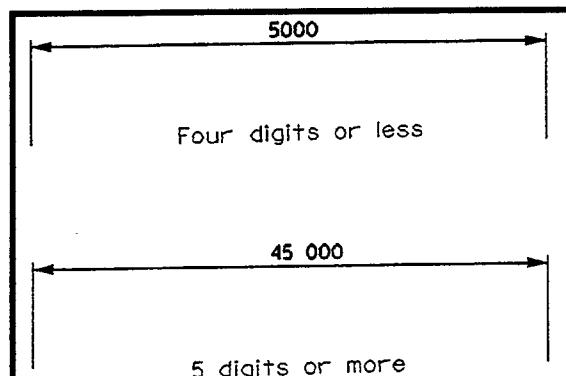


Figure 16. Proper dimension presentations for metric measurements with four or more digits

The Unit Separation toggle under the *Unit Format* setting for Dimension Settings can be used to add a space after the thousands place in a value (Figure 17). Since toggling this value on and off for drawing files containing varying dimension values would be tedious, recommend toggling Unit Separation "on" for files containing *any* dimension values over 5 digits and "off" for files containing dimension values with *only* 4 or fewer digits.
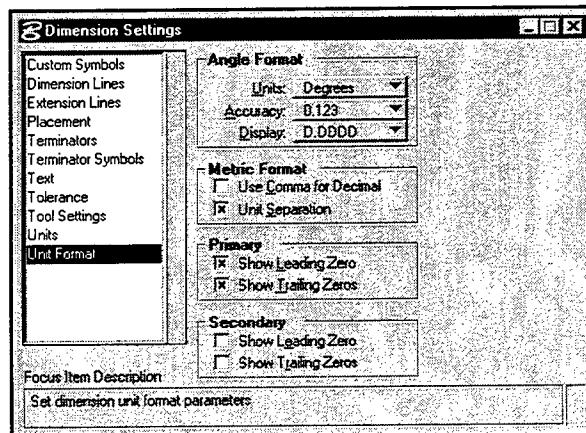


Figure 17. Unit format

**Note:** *The automatic dimensioning features of AutoCAD do not allow users to replace commas with spaces in dimension text. The dimension text will presently have to be edited to provide the spacing required by ASTM E 621-94 (ASTM 1999).*

## Dual units

To avoid confusion, dual units (both inch-pound and metric) should not be used. As stated in Construction Metrication Council (1998), use of dual units "increases dimensioning time, doubles the chance for errors, makes drawings more confusing, and only postpones the (metric) learning process."

Exceptions to this include certain "standard building designs" where dual dimensions ensure that the design can be used in either SI or inch-pound projects and in situations where products/components used in an SI project are available only as inch-pound products.

# 4 Level/Layer Assignments

## Levels/Layers

CADD levels or layers are analogous to overlays in manual drafting systems and serve to separate graphic elements (lines, shapes, and text) according to the design discipline they represent (Figure 18).

Level/Layer Name

A—WALL—EXTR

A—CLNG—GRID

A—LITE—CLNG

Sheet File Composite

REFLECTED CEILING PLAN
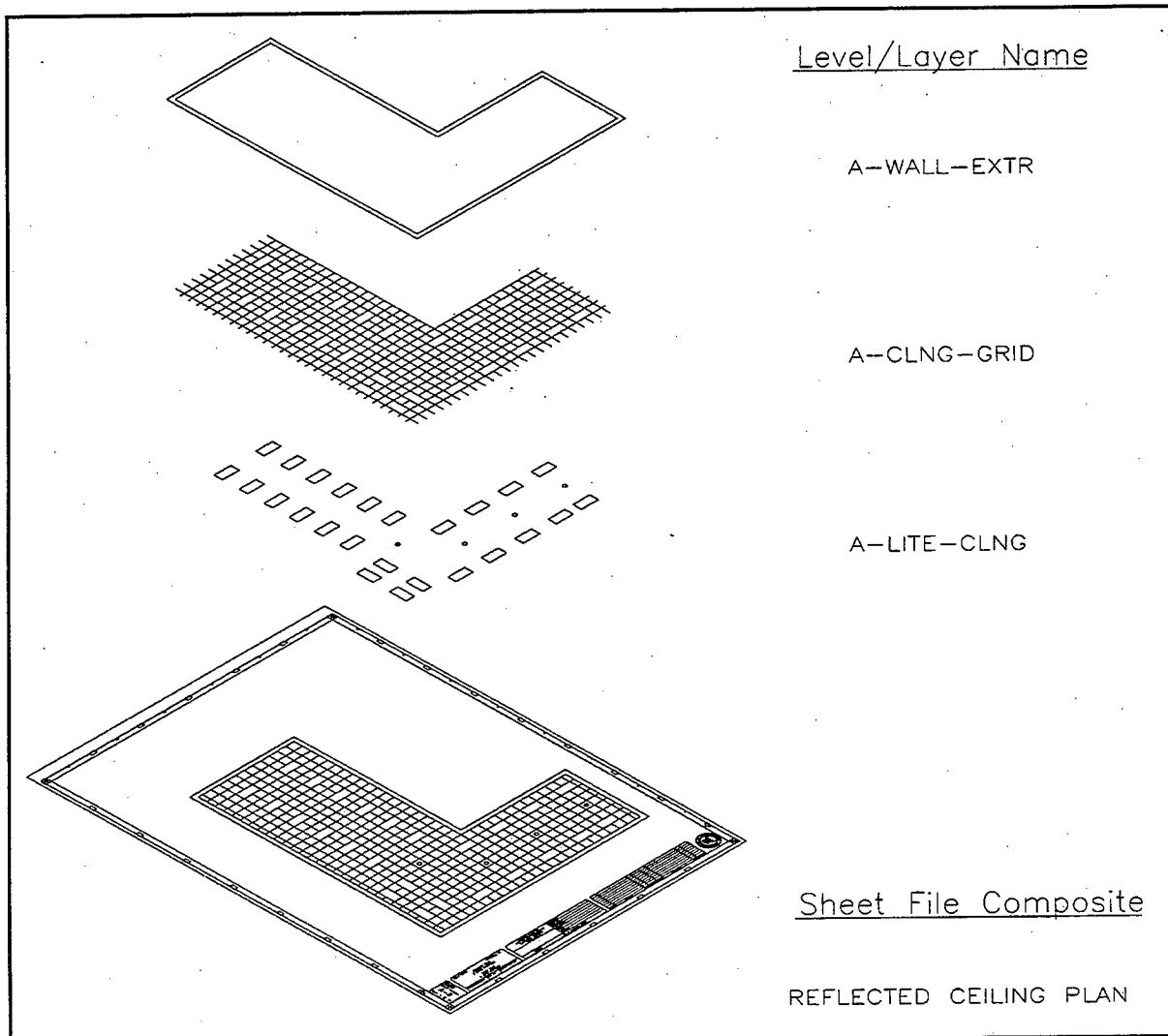
Figure 18. Typical levels/layers contained in a sheet file

The types of information represented by individual levels/layers can be grouped into two primary types: model-specific information and sheet-specific information (Figure 19).

- Model-specific information represents the physical form of a site, a building, or objects composing a building. This information is often shared between drawings. Examples include walls, doors, light fixtures, and room numbers. Model-specific information may be either literal (e.g., walls) or symbolic (e.g., electrical outlets).
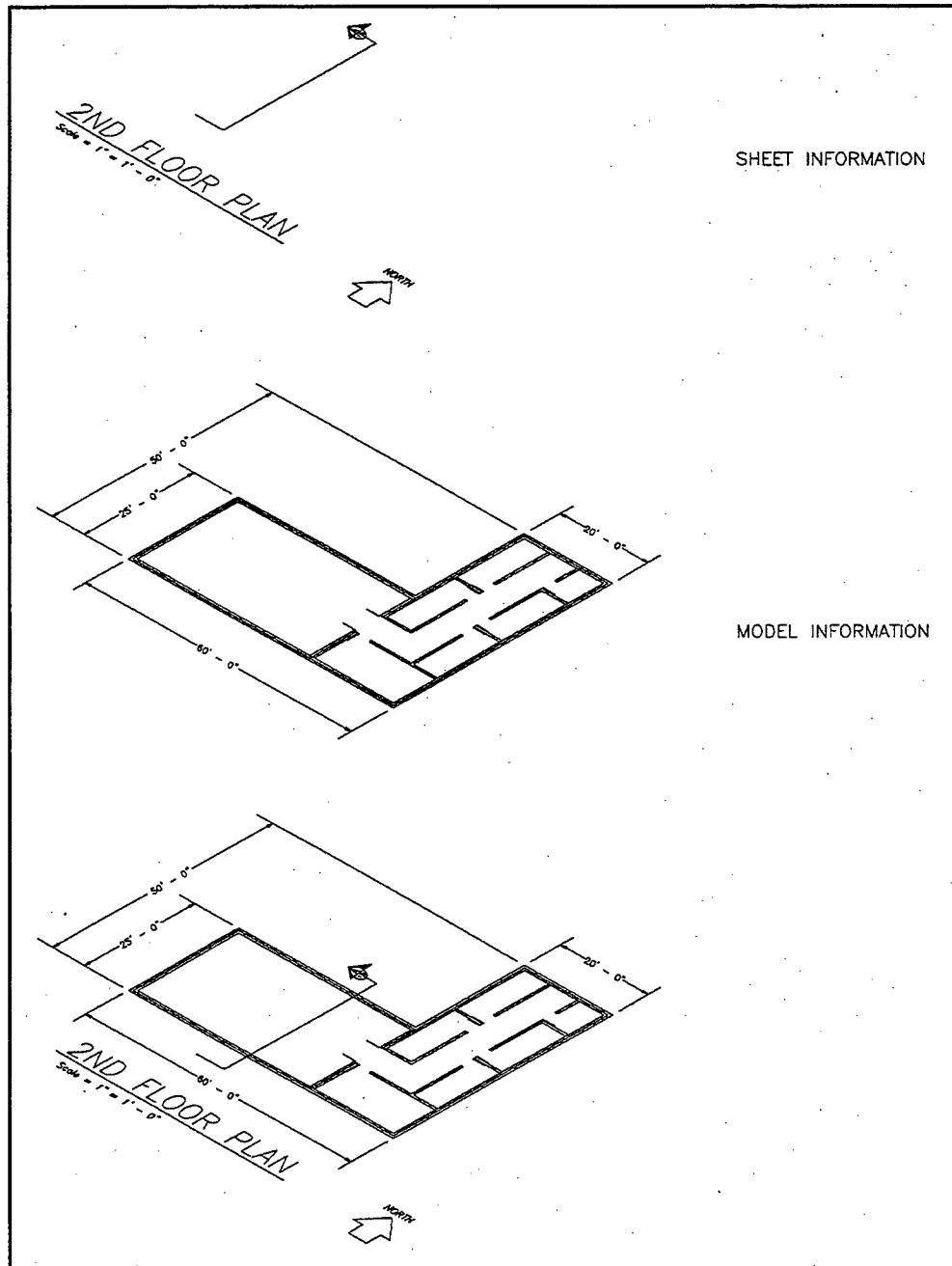
Figure 19. Sheet- and model-specific information

- Sheet-specific information may include notes, annotative symbols, and titles. This type of information is usually not shared between drawings.

To use and manipulate model-specific and sheet-specific information effectively, every level/layer must be defined (standardized) by its name and its use.

## Level/layer naming convention

The reuse, not duplication, of graphic information reduces drawing time and improves project coordination. The level/layer is the basic tool used in CADD for managing graphic information. The levels/layers defined within these standards are based on the recommendations set forth in "AIA CAD Layer Guidelines" (AIA 2001).

Level/layer names consist of a two-character *Discipline Designator* (e.g., "A-" for Architectural, "M-" for Mechanical), followed by a four-character *Major Group* (e.g., "DOOR" for Doors, "LITE" for Lighting Fixtures), followed by four-character *Minor Group* (e.g., A-WALL-FULL-EXTR for exterior full height walls versus A-WALL-FULL-INTR for interior full height walls) (Figure 20).
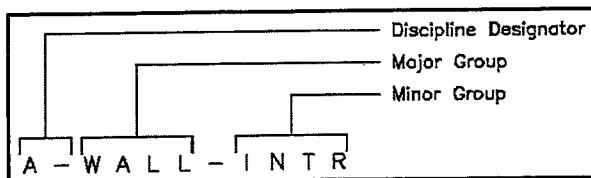


Figure 20. Level/layer naming format

## ISO format

ISO 13567-2 (1SO 1998) presents an international method for level/layer naming (Figure 21). This method consists of 10 mandatory alphanumeric characters, followed by 10 optional alphanumeric characters. The first two-character field, *Agent Responsible*,

correlates to the AIA's Discipline Designator. The following six-character field, *Element*, can map to a shortened version of the AIA's Major and Minor Groups (e.g., DOOR-FULL becomes DOORFU, DOOR-PRHT becomes DOORPR). The final two-character field in the mandatory level/layer name, *Presentation*, designates whether the level/layer information is Model information (i.e., model-specific information) or Page/Paper information (i.e., sheet-specific information). Appendix A gives a corresponding ISO Format level/layer name for each AIA Format level/layer name.

# Model Files

As mentioned in Chapter 2, model files represent full-size drawings of building elements, systems, or information (e.g., the mechanical HVAC system, the architectural floor plan, details, sections) and sheet files represent final plotted sheets. Model files are used as components in creating plotted sheet files. The information contained within a model file for a discipline may be referenced by other disciplines to create the particular model files or sheet files for that discipline.

A model file can be considered a "work in progress." For instance, a mechanical engineer may reference the architect's floor plan model file to begin development of the HVAC ductwork layout model file. Meanwhile, the architect can continue developing the floor plan to meet new requirements. Any changes to the floor plan would be immediately accessible to the mechanical engineer. The viewing of real-time updates eliminates a great deal of frustration for other disciplines because it allows for on-the-spot rather than after-the-fact modifications.

## Level/layer assignment tables

The level/layer assignment tables in Appendix A present the following (Figure 22 presents an excerpt):
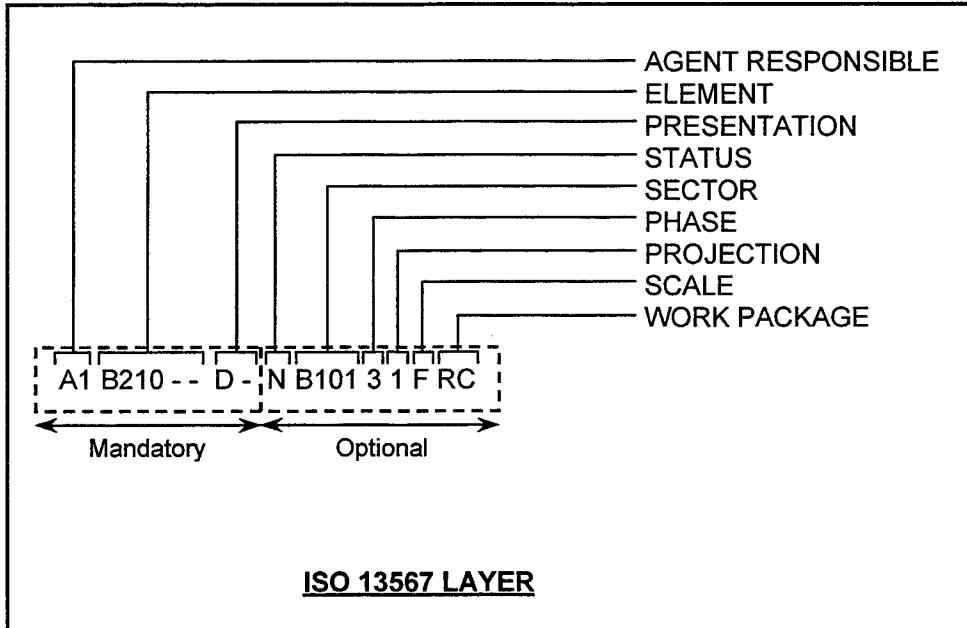
Figure 21. ISO 13567-2 level/layer naming method

- The levels/layers assigned to each model file.

- The level number assigned to each level/layer name (MicroStation users only).

- An AIA and corresponding ISO format level/layer name for each level/layer.

- A detailed description for each level/layer.

- The presentation graphics associated with each level/layer. This includes the line style, line width, and color.

**Annotation levels/layers.** Users should note that the first eight level/layers for every model file type (with the exception of detail model file types) are the same, the only difference being that the Discipline Designator changes depending on the discipline for that model file type. The unique function of these eight annotation levels/layers is to contain model-specific information that might not be required by other disciplines. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**ANNO-DIMS
　Witness/extension lines, dimension
　terminators and dimension text.
**ANNO-KEYN
　Reference keynotes with associated leaders.
**ANNO-NOTE
　General notes and remarks.
**ANNO-NPLT
　Non-plotting graphic information.
**ANNO-PATT
　Miscellaneous patterning and hatching.
**ANNO-SYMB
　Miscellaneous symbols.
**ANNO-TEXT
　Miscellaneous text and callouts with
　associated leaders.
**ANNO-REFR
　An AutoCAD user-specific layer for use in
　attachment of external references (i.e.,
　reference files).

**Demolition levels/layers.** Users should note that several model files have three levels/layers reserved for demolition items. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**Discipline: Architectural**
**Model File Type: Floor Plan**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color# | MicroStation Line Color |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 10 | A-FLOR-IDEN | A-FLORIDM- | Room name, space identification text | 0 | 0.25 | G/3 | G/2 |
| 11 | A-FLOR-NUMB | A-FLORNUM- | Room/space identification number and symbol | 0 | 0.25 | G/3 | G/2 |
| 12 | A-FLOR-FIXT | A-FLORFIM- | Floor mounted/Free standing miscellaneous fixtures | 0 | 0.25 | G/3 | G/2 |
| 13 | A-FLOR-LEVL | A-FLORLEM- | Level changes, shafts, ramps, pits, breaks in construction, and depressions | 0 | 0.35 | M/6 | M/5 |
| 15 | A-FLOR-OTLN | A-FLOROTM- | Floor outline/perimeter/building footprint | 0 | 0.35 | M/6 | M/5 |
| 16 | A-FLOR-PATT | A-FLORPAM- | Paving, tile, carpet patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 17 | A-FLOR-RAIS | A-FLORRAM- | Access (raised) flooring | 0 | 0.25 | G/3 | G/2 |
| 18 | A-FLOR-RPRM | A-FLORRPM- | Room perimeter shape (interior walls) | 0 | 0.35 | Y/2 | Y/4 |
| 19 | A-FLOR-SIGN | A-FLORSIM- | Signage | 0 | 0.25 | R/1 | R/3 |
| 20 | A-FLOR-SPCL | A-FLORSPM- | Architectural specialties (e.g., toilet room accessories, display cases) | 0 | 0.25 | G/3 | G/2 |

Figure 22.  Model file level/layer assignment table

**STAT-DEMO-PHS1
Demolition - phase 1.
**STAT-DEMO-PHS2
Demolition - phase 2.
**STAT-DEMO-PHS3
Demolition - phase 3.

These levels/layers should only be used when an Existing/Demolition model file is being created (see Chapter 2, "Model File naming convention"). For instance, the architect or engineer will sometimes have existing as-built model files, such as Site Plans and Floor Plans from a previous project. A copy of the as-built file will be made for use in the current project. This copy is renamed to be the Existing/ Demolition Plan model file for that discipline. In order to distinguish items to be demolished from existing items that will remain, those items should be moved to the Demolition levels/layers (if the demolition is not phased, all items should be moved to the **STAT-DEMO-PHS1 level/ layer). When the Existing/Demolition Plan model file is referenced into a new file to create the New construction items, the Demolition levels/layers would be turned off.

## Border sheets

As mentioned before, a model file contains information that can be referenced by other disciplines to create other model files or final sheet files. A border sheet model file contains border sheet linework, the title block, and project-specific symbols and text. Typically, each discipline will use the same border sheet and fill in sheet-specific information within the title block or revision block prior to printing the final sheet file (e.g., sheet number, designer names).

## Reference files (XREFs)

Reference files (external references or XREFs) enable designers to share drawing information electronically, eliminating the need to exchange hard copy drawings between the design disciplines. With the use of reference files, the structural engineer need not wait for the architect to complete the architectural floor plans before beginning the structural framing plan model file. Nor does the engineer have to redraw the architect's structural walls on the structural framing plan model file.

Referencing electronic drawing information makes any future changes made by the architect apparent to the structural designer. This real-time access to the work of others ensures accuracy and consistency within a set of drawings and helps promote concurrent design efforts. No longer does one discipline have to wait until another discipline is nearly finished before they begin their drawings.

The use of reference files is a key component in the successful use of the level/layer assignments. To create either a model file or a final sheet file, multiple referenced model files may be required. Figure 23 shows how a simple Plumbing Piping Plan model file is developed using levels/layers referenced from the Enlarged Floor Plan model file. These referenced levels/layers show the current locations of walls, toilets, and sinks placed by the architect. The engineer uses this information to design the piping system required to service the plumbing fixtures. The architectural floor plan would then be detached and the Plumbing Piping Plan would be saved as a separate model file.

# Sheet Files

Sheet files are the final project sheets that are ready to be plotted. A sheet file is an assembly of referenced model files plus additional sheet-specific information (e.g., north arrows, scales, section cuts, title block information).

## Level/layer assignment tables

The level/layer assignment tables in Appendix B present the following (Figure 24):

- The levels/layers assigned to each sheet file.

- The level number assigned to each level/layer (MicroStation users only).

- An AIA and corresponding ISO format level/layer name for each level/layer.

- A detailed definition for each level/layer.
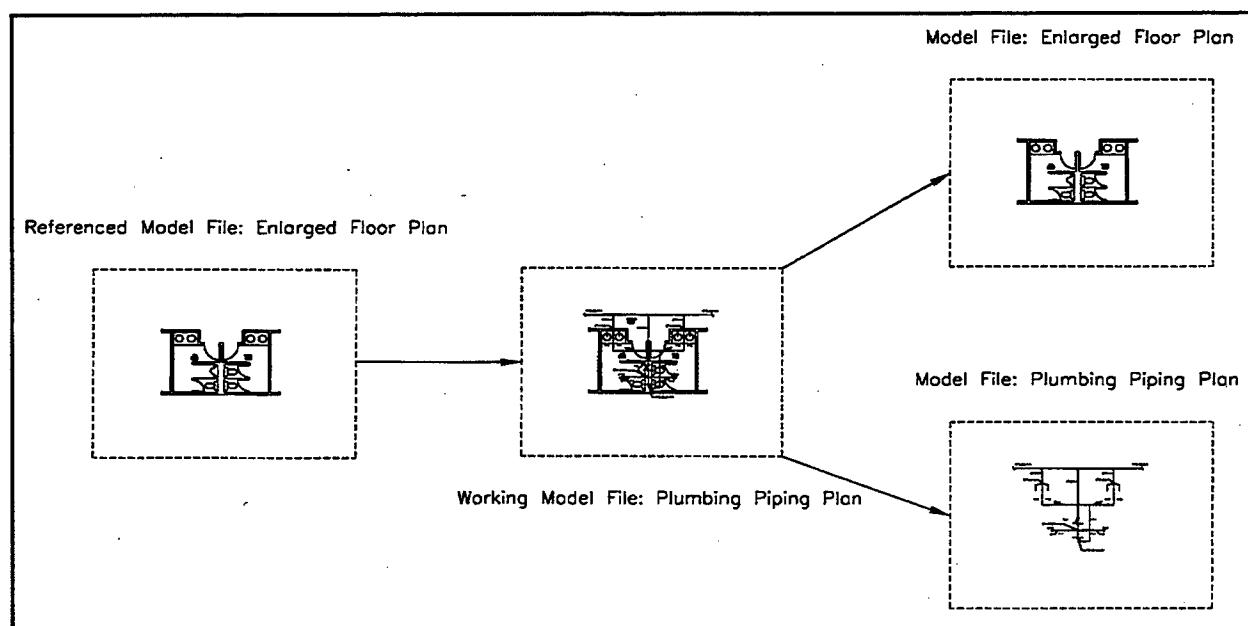


Figure 23. Using referenced model files to build a new model file without redundant effort

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-LEGN | A----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | A-ANNO-PATT | A----PAP- | Sheet-specific patterning, cross-hatching, poche (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | A-ANNO-REDL | A----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | A-ANNO-REVS | A----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | A-ANNO-REFR | A----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Figure 24. Sheet file level/layer assignment table

- The presentation graphics associated with each level/layer. This includes the line style, line width, and color.

Users should note that the first ten level/layers of the sheet file type for every discipline are the same, with the exception that the Discipline Designator changes depending on the discipline for that sheet file type. The unique function of these ten Annotation levels/layers is to contain sheet-specific information. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**ANNO-DIMS
    Sheet-specific witness/extension lines, dimension terminators, and dimension text.
**ANNO-KEYN
    Sheet-specific keynotes with associated leaders.
**ANNO-LEGN
    Legends and schedules.
**ANNO-NOTE
    Sheet-specific general notes and remarks.
**ANNO-PATT
    Sheet-specific patterning and hatching (e.g., keyplan patterning).

**ANNO-REDL
    Redlines, markups.
**ANNO-REVS
    Revisions, amendments, addenda, and modifications.
**ANNO-SYMB
    Sheet-specific symbols (e.g., north arrow, scales).
**ANNO-TEXT
    Sheet-specific text and callouts with associated leaders.
**ANNO-REFR
    An AutoCAD user-specific layer for use in attachment of external references (i.e., reference files).

## Development of sheet files

As mentioned previously, referenced model files are used in the construction of sheet files. The user opens the sheet file type from Appendix B that is appropriate to his/her discipline then references existing model files.

As an example, in order to create a final Plumbing Plan sheet file (Figure 25), the engineer would first open/create a new sheet file.
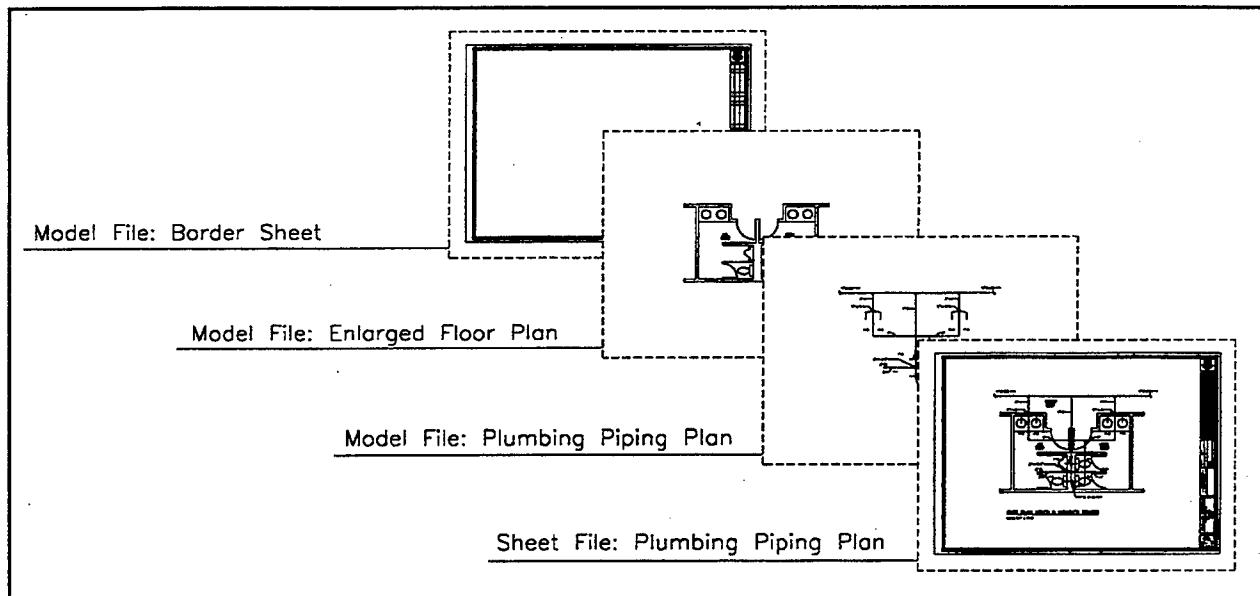
Figure 25. Using multiple referenced model files to build a sheet file without redundant effort

The engineer would reference various model files, such as the Architectural Floor Plan and the Plumbing Piping Plan. The engineer would have to "turn off" levels/layers within each referenced model file to achieve the desired sheet file. Then the Border Sheet model file would be referenced and scaled up to fit around the other referenced model files. Finally, the ten sheet file levels/layers such as P-ANNO-TEXT would be used to fill in sheet-specific information (e.g., sheet number, designer name). Once the final sheet file is achieved, the resulting file is saved (with all reference files attached).

# 5 Standard Symbology

## Introduction

A "cell" in MicroStation and a "block" in AutoCAD are groups of graphical elements that can be manipulated as a single entity. Examples of typical cells/blocks are windows, doors, graphic scale keys, furniture, etc. The use of such symbology enhances CADD productivity and provides an excellent opportunity for CADD standardization.

## Electronic Version of the Symbology/Elements

### Deliverables

Within the electronic deliverables available as part of the A/E/C CADD Standard, the following symbology is provided (Figure 26):

- MicroStation cells contained in cell libraries (.cel) and custom line styles contained in resource files (.rsc).

- AutoCAD blocks, each in an individual drawing (.dwg) file, patterns in a pattern library file (.pat), multilines in a multiline library file (.mln), and custom line styles in a line type library file (.lin).

### Line styles

Line style definitions determine the particular dash-dot sequence and relative length

of dashes, blank spaces, and the characteristics of any included text or shapes. Working with line styles provides a means of distinguishing the purpose of one line from another.

AutoCAD and MicroStation both provide a set of standard line styles, as well as allowing the user to define custom line styles. In AutoCAD these custom line styles are defined in a line type library file (.lin) and a multiline library file (.mln). In MicroStation, custom line styles are contained in resource files (.rsc) (see Chapter 3 "Line Types/Styles" for more information.

**Note:** *Custom line styles do not readily translate between systems; therefore users should anticipate that translated custom line styles may revert into their primitive graphics.*

## Tabulated Version of the Symbology/Elements

Graphical presentations of the entire symbology library are shown in Appendix D "A/E/C CADD Symbology."

The symbology library contains four types of elements: Lines, Patterns, Symbols, and Objects. Lines are defined as a graphical representation of linear drawing features (e.g., utility lines, fence lines, contours). Patterns are defined as repeated drawing elements (e.g., lines, dots, circles) within a defined area. Symbols are defined as MicroStation cells or AutoCAD blocks that are
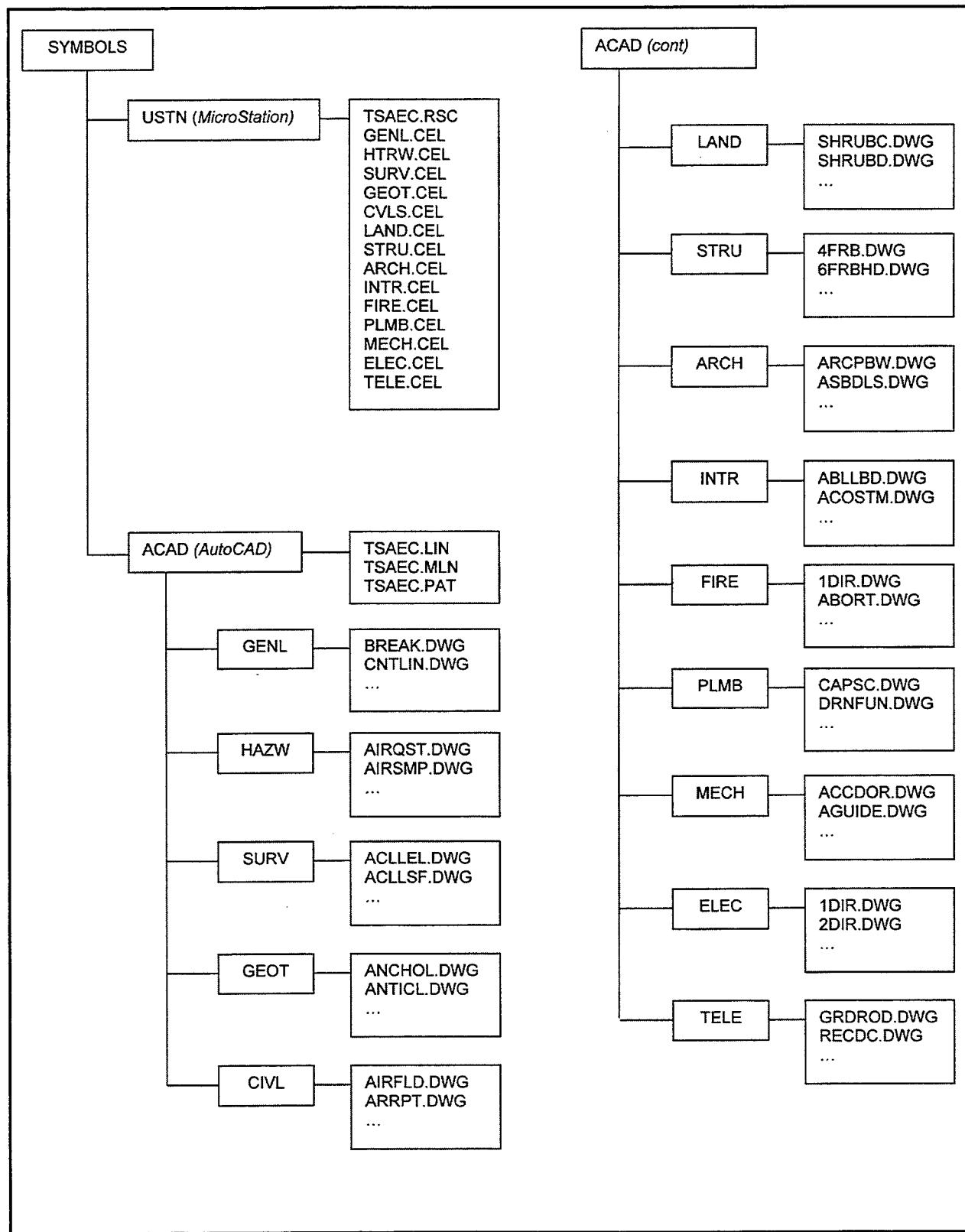
Figure 26. Symbology directory structure

representative of objects (e.g., electrical outlets, smoke detectors). Objects are defined as MicroStation cells or AutoCAD blocks that retain their actual size no matter the scale of the drawing (e.g., 30- by 50-in. desk, 3'-0" door).

Examples of the four element types are shown in Figures 27-30 and include the following information:

- **Name** - The name of the line type, pattern, symbol, or object. This is the name used when accessing the element with AutoCAD or MicroStation.

- **Description** - A brief explanation of what the symbol represents.

- **Element type** - The type of element that the symbology represents (i.e., line, pattern, symbol, or object).



Architectural:ALUMIN
ALUMINUM PATTERN
Element type: Pattern
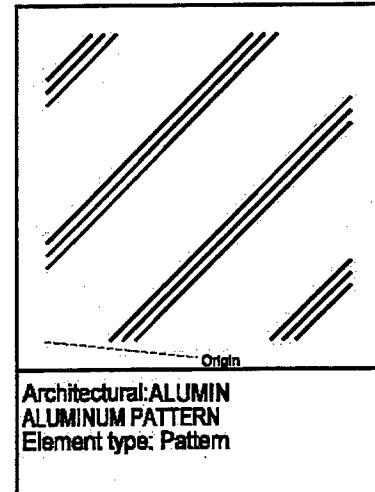
Figure 28. Pattern element



Civil/Site:INSHWY
INTERSTATE HIGHWAY SYMBOL
Element type: Symbol
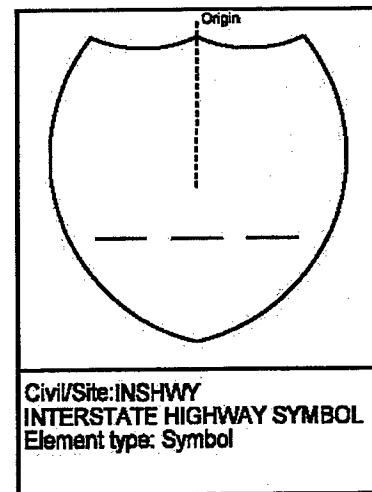
Figure 29. Symbol element



Survey and Mapping:FENCE
FENCE
Element type: Line

Figure 27. Line element



Architectural:DORSHR
RIGHT SINGLE HINGED DOOR
Element type: Object
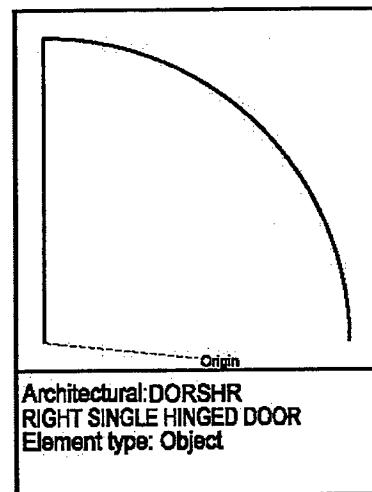
Figure 30. Object element

# 6 A/E/C CADD Standard Implementation Tools

CADD users throughout the DoD have indicated a need for customized shortcuts or utilities to facilitate efficient production of architectural and engineering CADD documents. Since the distribution of Release 1.4 of the A/E/C CADD Standard, users have been requesting tools to implement this detailed standard.

To meet this demand, the CADD/GIS Technology Center has developed applications for both AutoCAD and MicroStation that help in implementing the CADD Standard (i.e., the user will rarely have to refer to the standard document when developing CADD files).

The MicroStation-based tool (called Workspace) is distributed in three components: the Workspace generator, the Workspace itself, and a standard compliance checker. The generator creates the workspace tools (palettes, icons, etc.) using a Microsoft Access database that contains all the information within the model file tables in the CADD Standard. Using a "generator" gives system administrators the ability to edit the Access database and rerun the generator to create a Workspace that meets site-specific needs. The Workspace (Figure 31) allows the user to select the type of model or sheet file he/she wants to create (e.g., Architectural Floor Plan), and a palette of the various items that can be placed in that type of file is generated (e.g., doors, windows). The user then selects the specific type of item required (e.g., full height doors, partial height

doors, door symbols) and the workspace sets the proper level settings (e.g., level number, color, line weight, line style).

The final part of the workspace is the checker (Figure 32). The checker can evaluate individual model files to determine if they are in compliance with the A/E/C CADD Standard. The checker records which elements are not in compliance and can locate those elements for the user within the file.

The AutoCAD counterpart to the MicroStation A/E/C Workspace is also available. Using the same Access database as the MicroStation version, the AutoCAD A/E/C Workspace also assists the user in setting the correct drawing layer properties (Figure 33). The symbology in the A/E/C CADD Standard is also available for placement.

The Coast Guard is also adapting their CE-CADD software, which runs in AutoCAD, to follow the A/E/C CADD Standard. This product will be completed in the latter half of FY2001.

Further information on these implementation tools can be obtained from the CADD/GIS Technology Center web site at *http://tsc.wes.army.mil.*
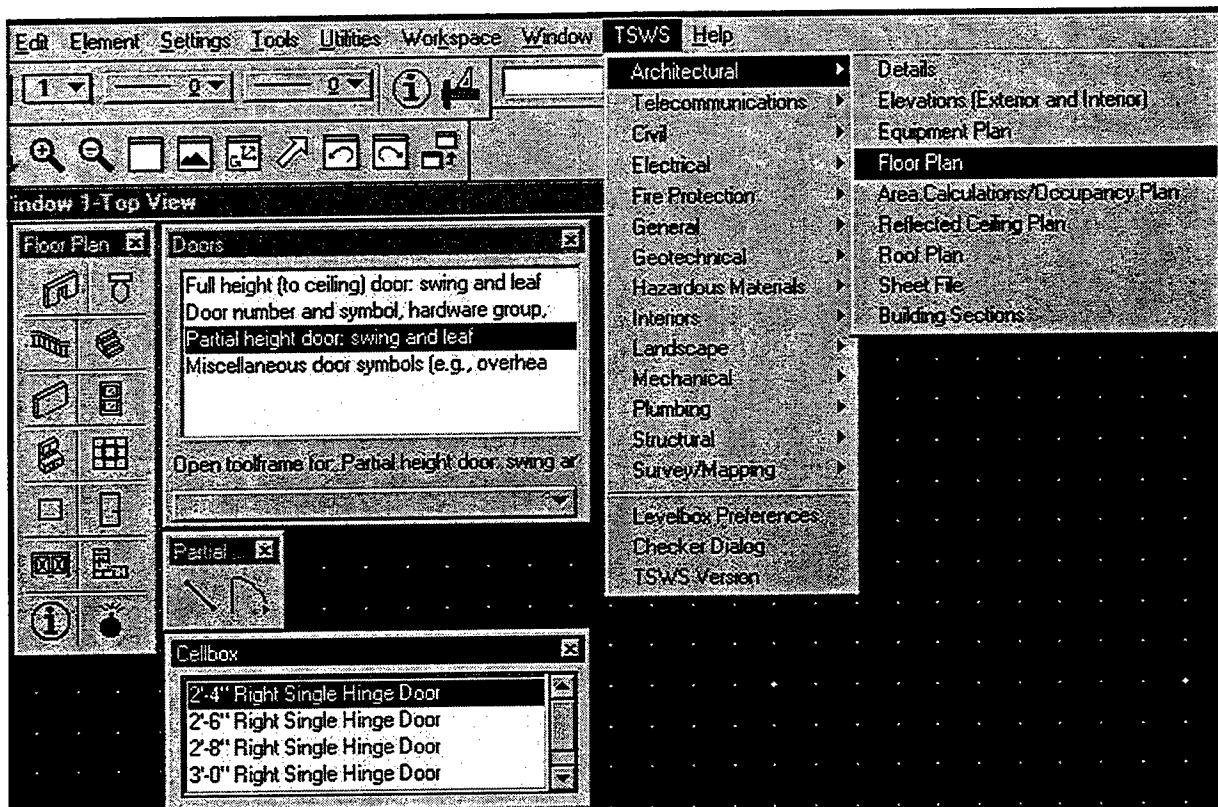
Figure 31. MicroStation workspace
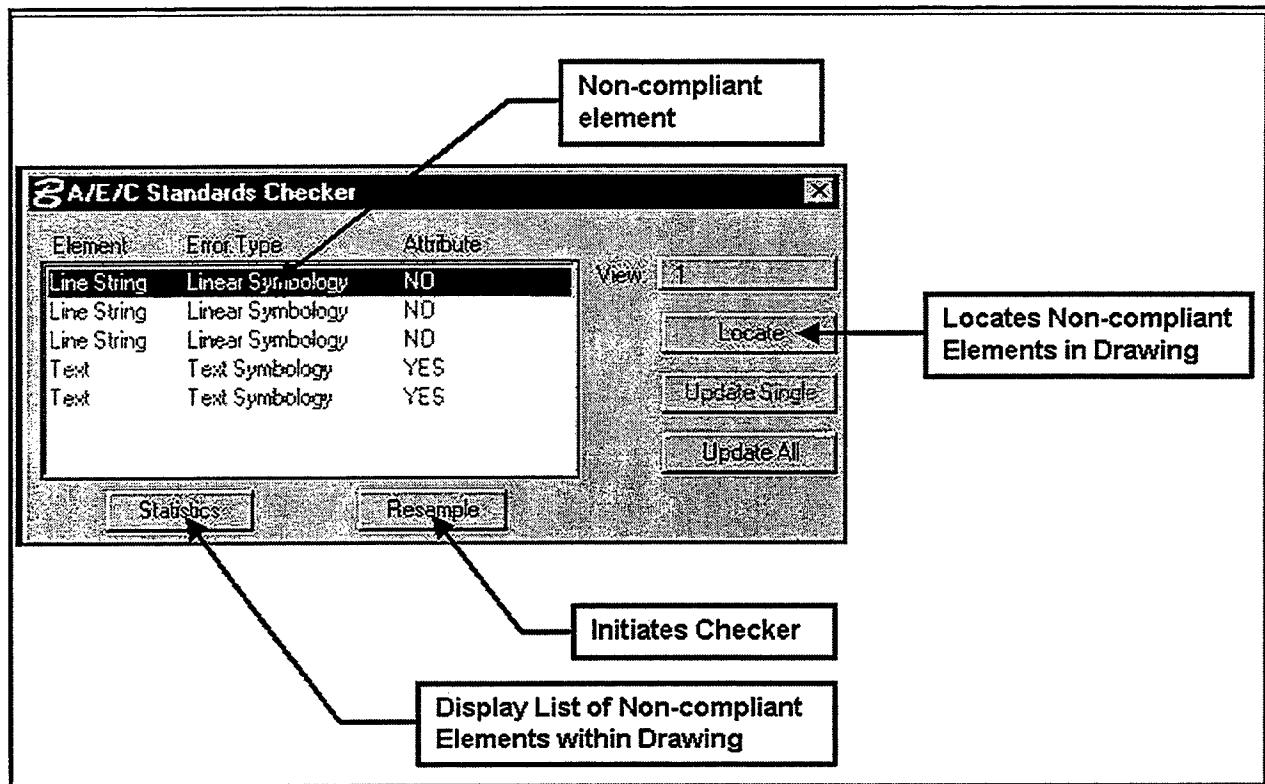
Figure 32. Workspace checker
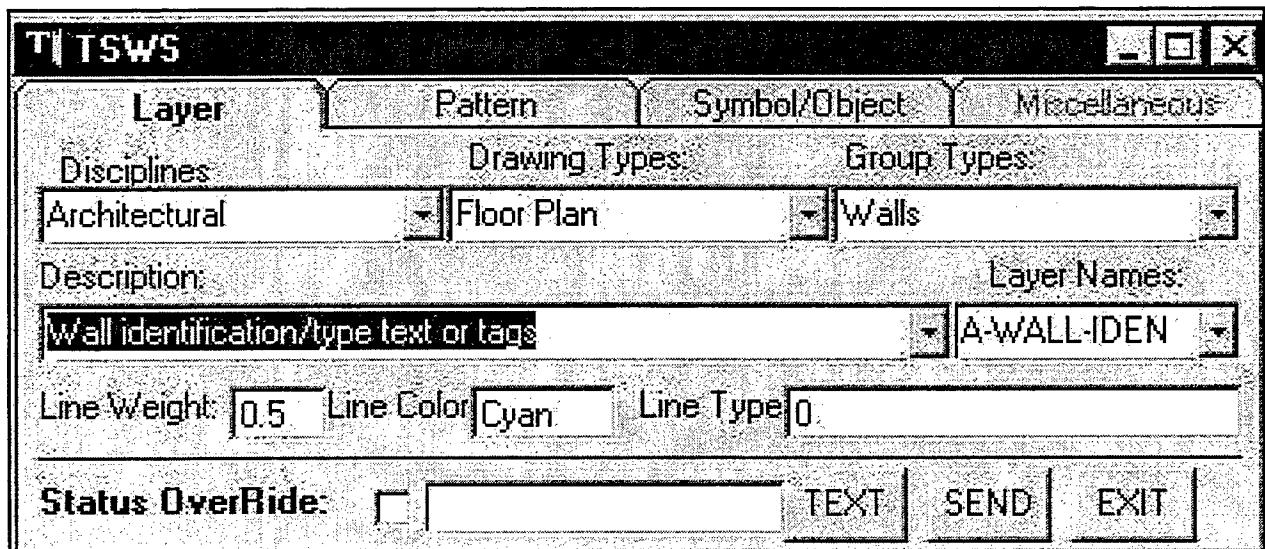


Figure 33. AutoCAD workspace

# References

American Institute of Architects. (1988). *Architectural graphic standards.* 8th ed., John Wiley and Sons, New York.

American Institute of Architects. (2001). *AIA CAD layer guidelines: U.S. national CAD standard version 2.* American Institute of Architects Press, Washington, DC.

American National Standard Institute. (1972). "Graphic symbols for electrical wiring and layout diagrams used in architect and building construction," ANSI Y32.9-1972, Institute of Electrical and Electronics Engineers, New York.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (1997). "1997 ASHRAE fundamentals handbook," Atlanta, GA.

American Society of Mechanical Engineers. (1995). "Decimal inch drawing sheet size and format," ASME Y14.1-1995, New York.

_____ . (1995). "Metric drawing sheet size and format," ASME Y14.1M-1995, New York.

American Society of Plumbing Engineers. (1998). "Data book Volume 1: Fundamentals of plumbing engineering," Chicago, IL.

American Society for Testing and Materials. (1999). "Standard practice for the use of metric (SI) units in building design and construction (Committee E-6 Supplement to E380)," ASTM E621-94, Philadelphia, PA.

Construction Metrication Council. (1998). *Construction metrication.* Vol 7, Issue 1, National Institute of Building Sciences, Washington, DC.

Construction Specifications Institute. (2001). *Uniform drawing system.* Alexandria, VA.

Department of Commerce/Department of Defense. (1997). *United States of America nautical chart symbols, abbreviations, and terms.* 10th ed., Department of Commerce, Washington, DC.

Headquarters, U. S. Army Corps of Engineers. (1990). "Standards manual for U. S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) systems," Engineer Manual 1110-1-1807, Washington, DC.

International Organization for Standardization. (1982). "Technical drawings - General principles of presentation," ISO 128, Switzerland.

_____. (1998). "Technical product documentation - Organization and naming of layers for CAD - Part 2: Concepts, format and codes used in construction documentation," ISO 13567-2, Switzerland.

National Fire Protection Association. (1999). "Standard for fire safety symbols," NFPA 170, Quincy, MA.

Sheet Metal and Air Conditioning Contractors' National Association. (1995). *HVAC duct construction standards-metal and flexible*. 2nd ed., Chantilly, VA.

The CADD/GIS Technology Center. (1999). "A/E/C CADD standard: Main text and appendices A-E," U.S. Army Engineer Research and Development Center, Vicksburg, MS.

_____. (2001). "Spatial data standards/facility management standards," Release 2.0, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

# Appendix A
# Model File Level/Layer Assignment Tables

This appendix provides the model file level/layer assignment tables:

# Architectural

# Interiors

# Fire Protection

# Plumbing

# Mechanical

# Electrical

# Telecommunications

**Discipline: General**

**Model File Type: Border Sheet**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 6 | G-ANNO-SYMB | G----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | G-ANNO-TEXT | G----TEP- | Miscellaneous text | 0 | V | V | V |
| 10 | G-ANNO-TTLB | G----TTP- | Border and title block linework | 0 | V | V | V |

Note: V = Varies, NA = Not Applicable

**Discipline: General**

**Model File Type: Key Plan**

| | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 3 | G-ANNO-NPLT | G----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | G-ANNO-PATT | G----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 6 | G-ANNO-SYMB | G----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | G-ANNO-TEXT | G----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | G-ANNO-REFR | G----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Grid Lines** | | | | | | | |
| 11 | G-GRID-EXTR | G-GRIDEXM- | Column grid outside building | 7 | 0.18 | B/5 | B/1 |
| 12 | G-GRID-IDEN | G-GRIDIDM- | Column grid tags | 0 | 0.25 | R/1 | R/3 |
| **Floor Information** | | | | | | | |
| 15 | G-PLAN-OTLN | G-PLANOTM- | Floor outline/perimeter/building footprint | 0 | 0.35 | M/6 | M/5 |
| **Site Information** | | | | | | | |
| 20 | G-SITE-OTLN | G-SITEOTM- | Site plan - key map | 0 | 0.35 | M/6 | M/5 |

Note: V = Varies, NA = Not Applicable

# Discipline: Hazardous Materials

## Model File Type: Pollution Prevention Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | H-ANNO-DIMS | H-----DIP | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | H-ANNO-KEYN | H-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | H-ANNO-NPLT | H-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | H-ANNO-PATT | H-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | H-ANNO-NOTE | H-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | H-ANNO-SYMB | H-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | H-ANNO-TEXT | H-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | H-ANNO-REFR | H-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Buildings** | | | | | | | |
| 11 | H-BLDG-IDEN | H-BLDGIDM- | Annotation | 0 | 0.35 | Y/2 | Y/4 |
| 12 | H-BLDG-OTLN | H-BLDGOTM- | Command posts, information centers | 0 | 0.35 | Y/2 | Y/4 |
| **Storage Facilities** | | | | | | | |
| 13 | H-STOR-HAZM | H-STORHMM- | Hazardous materials | 0 | 0.35 | M/6 | M/5 |
| 14 | H-STOR-HAZW | H-STORHWM- | Hazardous waste | 0 | 0.35 | M/6 | M/5 |
| 15 | H-STOR-IDEN | H-STORIDM- | Annotation | 0 | 0.35 | M/6 | M/5 |
| **Monitoring Stations** | | | | | | | |
| 17 | H-MNST-GWTR | H-MNSTGWM- | Ground water | 0 | 0.25 | G/3 | G/2 |
| 18 | H-MNST-SWTR | H-MNSTSWM- | Surface water | 0 | 0.25 | G/3 | G/2 |
| 19 | H-MNST-AIRQ | H-MNSTAIM- | Air quality | 0 | 0.25 | G/3 | G/2 |
| 20 | H-MNST-SOIL | H-MNSTSOM- | Soil gas | 0 | 0.25 | G/3 | G/2 |
| 21 | H-MNST-LAND | H-MNSTLAM- | Landfill gas | 0 | 0.25 | G/3 | G/2 |
| 22 | H-MNST-IDEN | H-MNSTIDM- | Annotation | 0 | 0.25 | G/3 | G/2 |
| **Pollution Areas** | | | | | | | |
| 23 | H-POLL-ORIG | H-POLLORM- | Point of pollution origin | 0 | 0.35 | Y/2 | Y/4 |
| 24 | H-POLL-CONC | H-POLLCOM- | Polluted area of concern | 0 | 0.35 | Y/2 | Y/4 |
| 25 | H-POLL-POTN | H-POLLPOM- | Potential spill, emission, or release source | 0 | 0.35 | Y/2 | Y/4 |
| 26 | H-POLL-IDEN | H-POLLIDM- | Annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Decontamination** | | | | | | | |
| 29 | H-DECN-EQPM | H-DECNEQM- | Decontamination equipment | 0 | 0.25 | R/1 | R/3 |
| 30 | H-DECN-IDEN | H-DECNIDM- | Annotation | 0 | 0.35 | M/6 | M/5 |
| **Emergency Fixtures** | | | | | | | |
| 31 | H-FIXT-EYEW | H-FIXTEYM- | Emergency eyewashes | 0 | 0.25 | G/3 | G/2 |
| 32 | H-FIXT-SHOW | H-FIXTSHM- | Emergency showers | 0 | 0.25 | G/3 | G/2 |
| **Disposal Areas** | | | | | | | |
| 34 | H-DISP-HAZW | H-DISPHWM- | Hazardous waste | 0 | 0.18 | B/5 | B/1 |
| 35 | H-DISP-MUNT | H-DISPMUM- | Munitions | 0 | 0.18 | B/5 | B/1 |
| 36 | H-DISP-TANK | H-DISPTAM- | Spill containment tanks | 0 | 0.35 | M/6 | M/5 |
| 37 | H-DISP-IDEN | H-DISPIDM- | Annotation | 0 | 0.35 | M/6 | M/5 |
| **Sample Points** | | | | | | | |
| 39 | H-SAMP-AIRS | H-SAMPAIM- | Air samples | 0 | 0.25 | R/1 | R/3 |
| 40 | H-SAMP-BIOL | H-SAMPBIM- | Biological samples | 0 | 0.25 | R/1 | R/3 |
| 41 | H-SAMP-GWTR | H-SAMPGWM- | Ground water samples | 0 | 0.25 | R/1 | R/3 |
| 42 | H-SAMP-SEDI | H-SAMPSEM- | Sediment samples | 0 | 0.25 | R/1 | R/3 |
| 43 | H-SAMP-SOIL | H-SAMPSOM- | Soil samples | 0 | 0.25 | R/1 | R/3 |
| 44 | H-SAMP-SOLI | H-SAMPSLM- | Solid material samples | 0 | 0.25 | R/1 | R/3 |
| 45 | H-SAMP-SWTR | H-SAMPSWM- | Surface water samples | 0 | 0.25 | R/1 | R/3 |
| 46 | H-SAMP-WAST | H-SAMPWAM- | Waste samples | 0 | 0.25 | R/1 | R/3 |
| 47 | H-SAMP-MAGN | H-SAMPMAM- | Magnetometer location points | 0 | 0.25 | R/1 | R/3 |
| 48 | H-SAMP-IDEN | H-SAMPIDM- | Annotation | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | H-STAT-DEMO-PHS1 | H-----M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | H-STAT-DEMO-PHS2 | H-----M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | H-STAT-DEMO-PHS3 | H-----M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Hazardous Materials

**Model File Type: Sections**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | H-ANNO-DIMS | H-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | H-ANNO-KEYN | H-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | H-ANNO-NPLT | H-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | H-ANNO-PATT | H-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | H-ANNO-NOTE | H-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | H-ANNO-SYMB | H-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | H-ANNO-TEXT | H-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | H-ANNO-REFR | H-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Sections** | | | | | | | |
| 45 | H-SECT-IDEN | H-SECTIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 46 | H-SECT-MBND | H-SECTMBM- | Material beyond section cut | 0 | 0.18 | B/5 | B/1 |
| 47 | H-SECT-MCUT | H-SECTMCM- | Material cut by section | 0 | 0.50 | C/4 | C/7 |
| 48 | H-SECT-PATT | H-SECTPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | H-STAT-DEMO-PHS1 | H------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | H-STAT-DEMO-PHS2 | H------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | H-STAT-DEMO-PHS3 | H------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Hazardous Materials**

**Model File Type: Details**

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Graphics Line Width (mm) | Graphics AutoCAD Line Color/# | Graphics MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | H-ANNO-DIMS | H------DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | H-ANNO-KEYN | H------KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | H-ANNO-NPLT | H------NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | H-ANNO-PATT | H------PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 6 | H-ANNO-SYMB | H------SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | H-ANNO-TEXT | H------TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | H-DETL-GRPH | H-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | H-DETL-METR | H-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.25 | G/3 | G/2 |
| 13 | H-DETL-INPD | H-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | H-STAT-DEMO-PHS1 | H-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | H-STAT-DEMO-PHS2 | H-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | H-STAT-DEMO-PHS3 | H-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

Model File Type: Survey and Mapping Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Survey Lines** | | | | | | | |
| 8 | V-SURV-DATA | V-SURVDAM- | Survey data (benchmarks and horizontal control points or monuments) | 0 | 0.35 | M/6 | M/5 |
| 9 | V-SURV-LINE | V-SURVLIM- | Survey, baseline, and control line | 2 | 0.50 | C/4 | C/7 |
| 10 | V-SURV-IDEN | V-SURVIDM- | Survey, baseline, and control line annotation | 0 | 0.35 | M/6 | M/5 |
| **Buildings and Structures** | | | | | | | |
| 11 | V-BLDG-OTLN | V-BLDGOTM- | Buildings and other structures | 0 | 0.70 | W/7 | W/0 |
| 12 | V-BLDG-IDEN | V-BLDGIDM- | Building and other stucture annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Site** | | | | | | | |
| 13 | V-SITE-FENC | V-SITEFEM- | Fences and handrails | 0, FENCE | 0.35 | M/6 | M/5 |
| 14 | V-SITE-FENC-IDEN | V-SITEFIM- | Fence, handrail, ramp, and trail annotation | 0 | 0.35 | M/6 | M/5 |
| 15 | V-SITE-STRC | V-SITESRM- | Structures (bridges, sheds, foundation pads, footings, etc.) | 0 | 0.35 | 22 | 22 |
| 16 | V-SITE-IDEN | V-SITEIDM- | Existing site feature/structure annotation | 0 | 0.35 | M/6 | M/5 |
| 17 | V-SITE-OTLN | V-SITEOTM- | Existing site features (play structures, bike racks, benches, recreational equipment) | 0 | 0.50 | C/4 | C/7 |
| 18 | V-SITE-EROS | V-SITEERM- | Riprap, revetments/stone protection, breakwaters, dikes, jetties, and drains | 0 | 0.25 | R/1 | R/3 |
| 19 | V-SITE-EWAT | V-SITEEWM- | Water features | 0 | 0.35 | 162 | 33 |
| 20 | V-SITE-STRS | V-SITESTM- | Stairs and ramps | 0 | 0.35 | M/6 | M/5 |
| 21 | V-SITE-WALK | V-SITEWAM- | Walks, trails, and bicycle paths | 0 | 0.35 | Y/2 | Y/4 |
| 22 | V-SITE-VEGE | V-SITEVEM- | Existing treelines and vegetation | 0, TREEL | 0.35 | 82 | 18 |
| **Utilities (for more detailed surveys, use Survey and Mapping Utility model files)** | | | | | | | |
| 23 | V-UTIL-SSWR | V-UTILSSM- | Sanitary lines and manholes | 0, SSWAFX | 0.50 | C/4 | C/7 |
| 24 | V-UTIL-SSWR-IDEN | V-UTILSDM- | Sanitary annotation | 0 | 0.35 | Y/2 | Y/4 |
| 25 | V-UTIL-WATR | V-UTILWAM- | Water lines, hydrants, tanks | 0, WATRX | 0.50 | C/4 | C/7 |
| 26 | V-UTIL-WATR-IDEN | V-UTILWIM- | Water annotation | 0 | 0.35 | Y/2 | Y/4 |
| 27 | V-UTIL-NGAS | V-UTILNGM- | Gas lines, features, and valves | 0, NTGASX | 0.50 | C/4 | C/7 |
| 28 | V-UTIL-NGAS-IDEN | V-UTILNIM- | Gas annotation | 0 | 0.35 | Y/2 | Y/4 |
| 29 | V-UTIL-STEM | V-UTILSEM- | Steam lines and annotation | 0 | 0.35 | Y/2 | Y/4 |
| 30 | V-UTIL-STRM | V-UTILSTM- | Storm sewer lines, culverts, manholes, and headwalls | 0, STRAFX, CULVRT | 0.50 | C/4 | C/7 |
| 31 | V-UTIL-STRM-IDEN | V-UTILSIM- | Storm sewer annotation | 0 | 0.35 | Y/2 | Y/4 |
| 32 | V-UTIL-ELEC | V-UTILELM- | Power lines, lights, telephone poles, communication lines | 0, COMARX, COMUGX, EPARX, EPUGX, ESARX, ESUGX | 0.50 | C/4 | C/7 |
| 33 | V-UTIL-ELEC-IDEN | V-UTILEIM- | Power/communication annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Pavements/Transportation** | | | | | | | |
| 34 | V-PVMT-ROAD | V-PVMTROM- | Roads, parking lots, railroads, airfield pavements | 0, RAILS | 0.35 | Y/2 | Y/4 |
| 35 | V-PVMT-IDEN | V-PVMTIDM- | Road, parking lot, railroad, airfield pavement annotation | 0 | 0.35 | Y/2 | Y/4 |
| 36 | V-PVMT-PATT | V-PVMTPAM- | Joint patterns, text and dimensions | 0 | 0.35 | Y/2 | Y/4 |
| 37 | V-PVMT-MRKG | V-PVMTMRM- | Pavement markings and signs | 0 | 0.35 | Y/2 | Y/4 |

## Discipline: Survey/Mapping

### Model File Type: Survey and Mapping Plan

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topography** | | | | | | | |
| 38 | V-TOPO-DTCH | V-TOPODTM- | Ditches and swales | 0, DITCH | 0.25 | G/3 | G/2 |
| 39 | V-TOPO-BORE | V-TOPOBOM- | Boring locations | 0 | 0.35 | M/6 | M/5 |
| 40 | V-TOPO-COOR | V-TOPOCOM- | Coordinate grid ticks and text | 0 | 0.35 | 122 | 23 |
| 41 | V-TOPO-MAJR-IDEN | V-TOPOMAM- | Major contours - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 42 | V-TOPO-MAJR | V-TOPOMJM- | Major contours | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-TOPO-MINR-IDEN | V-TOPOMIM- | Minor contours - annotation | 0 | 0.25 | G/3 | G/2 |
| 44 | V-TOPO-MINR | V-TOPOMNM- | Minor contours | 0 | 0.25 | G/3 | G/2 |
| 48 | V-TOPO-SPOT | V-TOPOSPM- | Spot elevations | 0 | 0.35 | Y/2 | Y/4 |
| 49 | V-TOPO-SLOP-TOPT | V-TOPOSTM- | Top/toe slopes | 0 | 0.35 | M/6 | M/5 |
| 50 | V-TOPO-BKLN | V-TOPOBKM- | Breaklines | 4 | 0.70 | W/7 | W/0 |
| 51 | V-TOPO-DTMT | V-TOPODTM- | DTM triangles | 0 | 0.35 | 22 | 22 |
| 52 | V-TOPO-DTMP | V-TOPODPM- | DTM points | 0 | 0.35 | M/6 | M/5 |
| **Aerial Survey** | | | | | | | |
| 53 | V-AERI-PATH | V-AERIPAM- | Aerial flight lines/paths | 11 | 0.35 | 22 | 22 |
| 54 | V-AERI-BNDY | V-AERIBNM- | Aerial photography boundaries | 0 | 0.35 | M/6 | M/5 |
| 55 | V-AERI-INDX | V-AERIINM- | Aerial photo index | 0 | 0.70 | W/7 | W/0 |

Note:  V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

Model File Type: Hydrographic Survey and Mapping Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Survey Lines** | | | | | | | |
| 8 | V-SURV-DATA | V-SURVDAM- | Survey data (benchmarks and horizontal control points or monuments) | 0 | 0.35 | M/6 | M/5 |
| 9 | V-SURV-LINE | V-SURVLIM- | Survey, baseline, and control lines | 2 | 0.50 | C/4 | C/7 |
| 10 | V-SURV-IDEN | V-SURVIDM- | Survey, baseline, and control line annotation | 0 | 0.35 | M/6 | M/5 |
| **Structures** | | | | | | | |
| 11 | V-STRC-OTLN | V-STRCOTM- | Bridges, piers, breakwaters, docks, floats, etc. - outlines | 0 | 0.50 | C/4 | C/7 |
| 12 | V-STRC-IDEN | V-STRCIDM- | Bridges, piers, breakwaters, docks, floats, etc. - annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Channels** | | | | | | | |
| 14 | V-CHAN-LIMT | V-CHANLIM- | Channel limits, anchorages, turning basins, disposal areas, etc. | 0 | 0.35 | M/6 | M/5 |
| 15 | V-CHAN-IDEN | V-CHANIDM- | Channel limits, anchorages, turning basins, disposal areas, etc. - annotation | 0 | 0.35 | M/6 | M/5 |
| 16 | V-CHAN-DACL | V-CHANDAM- | De-authorized channel limits, anchorages, etc. | 0 | 0.25 | G/3 | G/2 |
| 17 | V-CHAN-DACL-IDEN | V-CHANDIM- | De-authorized channel limits, anchorages, etc. - annotation | 0 | 0.25 | G/3 | G/2 |
| 18 | V-CHAN-CNTR | V-CHANCNM- | Channel centerline and survey report lines | 4 | 0.18 | B/5 | B/1 |
| 19 | V-CHAN-CNTR-IDEN | V-CHANCIM- | Channel centerline and survey report lines - annotation | 0 | 0.18 | B/5 | B/1 |
| 20 | V-CHAN-AIDS | V-CHANAIM- | Navigation aids and text | 0 | 0.35 | Y/2 | Y/4 |
| **Topography** | | | | | | | |
| 39 | V-TOPO-BORE | V-TOPOBOM- | Boring locations | 0 | 0.35 | M/6 | M/5 |
| 40 | V-TOPO-COOR | V-TOPOCOM- | Coordinate grid ticks and text | 0 | 0.35 | 122 | 23 |
| 41 | V-TOPO-MAJR-IDEN | V-TOPOMAM- | Major contours - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 42 | V-TOPO-MAJR | V-TOPOMJM- | Major contours | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-TOPO-MINR-IDEN | V-TOPOMIM- | Minor contours - annotation | 0 | 0.25 | G/3 | G/2 |
| 44 | V-TOPO-MINR | V-TOPOMNM- | Minor contours | 0 | 0.25 | G/3 | G/2 |
| 45 | V-TOPO-SHOR | V-TOPOSHM- | Shorelines, land features, and references | 0 | 0.50 | C/4 | C/7 |
| 49 | V-TOPO-SOUN | V-TOPOSOM- | Soundings | 0 | 0.18 | V | V |

Note: V = Varies, NA = Not Applicable

# Discipline: Survey/Mapping

## Model File Type: Property Boundary

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Survey Lines** | | | | | | | |
| 8 | V-SURV-DATA | V-SURVDAM- | Survey data and benchmarks (PI, PT, etc information) | 0 | 0.35 | M/6 | M/5 |
| 9 | V-SURV-LINE | V-SURVLIM- | Survey and control line | 2 | 0.50 | C/4 | C/7 |
| 10 | V-SURV-IDEN | V-SURVIDM- | Survey and control line annotation | 0 | 0.35 | M/6 | M/5 |
| **Buildings and Structures** | | | | | | | |
| 11 | V-BLDG-OTLN | V-BLDGOTM- | Buildings and other structures | 0 | 0.35 | Y/2 | Y/4 |
| 12 | V-BLDG-IDEN | V-BLDGIDM- | Building and other structure annotation | 0 | 0.50 | C/4 | C/7 |
| **Site** | | | | | | | |
| 13 | V-SITE-FENC | V-SITEFEM- | Fences and handrails | 0, FENCE | 0.35 | M/6 | M/5 |
| 14 | V-SITE-FENC-IDEN | V-SITEFIM- | Fence, handrail, ramp, sign, and trail annotation | 0 | 0.35 | M/6 | M/5 |
| 15 | V-SITE-STRC | V-SITESRM- | Structures (bridges, sheds, foundation pads, footings, etc.) | 0 | 0.35 | 22 | 22 |
| 16 | V-SITE-IDEN | V-SITEIDM- | Existing site feature/structure annotation | 0 | 0.35 | M/6 | M/5 |
| 17 | V-SITE-OTLN | V-SITEOTM- | Existing site features (play structures, bike racks, benches, recreational equipment) | 0 | 0.50 | C/4 | C/7 |
| 18 | V-SITE-EROS | V-SITEERM- | Riprap, revetments/stone protection, breakwaters, dikes, jetties, and drains | 0 | 0.25 | R/1 | R/3 |
| 19 | V-SITE-EWAT | V-SITEEWM- | Water features | 0 | 0.35 | 162 | 33 |
| 20 | V-SITE-STRS | V-SITESTM- | Stairs and ramps | 0 | 0.35 | M/6 | M/5 |
| 21 | V-SITE-WALK | V-SITEWAM- | Walks, trails, and bicycle paths | 0 | 0.35 | Y/2 | Y/4 |
| 22 | V-SITE-VEGE | V-SITEVEM- | Existing treelines and vegetation | 0, TREEL | 0.35 | 82 | 18 |
| **Property** | | | | | | | |
| 22 | V-PROP-SECT | V-PROPSEM- | Section lines | 7 | 0.35 | M/6 | M/5 |
| 23 | V-PROP-QTRS | V-PROPQTM- | Quarter lines | 11 | 0.35 | M/6 | M/5 |
| 24 | V-PROP-BRNG | V-PROPBRM- | Bearings and distance labels | 0 | 0.35 | M/6 | M/5 |
| 25 | V-PROP-ESMT | V-PROPESM- | Government easements/property lines | 0 | 0.50 | C/4 | C/7 |
| 26 | V-PROP-LINE | V-PROPLIM- | Property lines (Existing recorded plats) | 3 | 0.35 | Y/2 | Y/4 |
| 27 | V-PROP-RWAY | V-PROPRWM- | Right of ways | RTOFWY | 0.70 | W/7 | W/0 |
| 28 | V-PROP-IDEN | V-PROPIDM- | Property annotation | 0 | 0.35 | M/6 | M/5 |
| 29 | V-PROP-SXTS | V-PROPSXM- | Sixteenth lines (40 lines) | 16THLN | 0.35 | M/6 | M/5 |
| **Utilities** | | | | | | | |
| 30 | V-UTIL-LINE | V-UTILLIM- | Utilities | V | 0.50 | C/4 | C/7 |
| 31 | V-UTIL-IDEN | V-UTILIDM- | Utility annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Pavements/Transportation** | | | | | | | |
| 34 | V-PVMT-ROAD | V-PVMTROM- | Roads, parking lots, railroads, airfield pavements | 0, RAILS | 0.35 | Y/2 | Y/4 |
| 35 | V-PVMT-IDEN | V-PVMTIDM- | Road, parking lot, railroad, airfield pavement annotation | 0 | 0.35 | Y/2 | Y/4 |
| 37 | V-PVMT-MRKG | V-PVMTMRM- | Signs | 0 | 0.35 | Y/2 | Y/4 |

Note: V = Varies, NA = Not Applicable

# Discipline: Survey/Mapping

## Model File Type: Existing Electrical Utilities Plan

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Primary Electrical Cables** | | | | | | | |
| 11 | V-PRIM-OVHD | V-PRIMOVM- | Overhead electrical utility lines | EPARX | 0.25 | R/1 | R/3 |
| 12 | V-PRIM-OVHD-IDEN | V-PRIMOIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 13 | V-PRIM-UNDR | V-PRIMUNM- | Underground electrical utility lines | EPUGX | 0.25 | R/1 | R/3 |
| 14 | V-PRIM-UNDR-IDEN | V-PRIMUIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| **Secondary Electrical Cables** | | | | | | | |
| 15 | V-SECD-OVHD | V-SECDOVM- | Overhead electrical utility lines | ESARX | 0.25 | 61 | 108 |
| 16 | V-SECD-OVHD-IDEN | V-SECDOIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 61 | 108 |
| 17 | V-SECD-UNDR | V-SECDUNM- | Underground electrical utility lines | ESUGX | 0.25 | 61 | 108 |
| 18 | V-SECD-UNDR-IDEN | V-SECDUIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 61 | 108 |
| **Transformers** | | | | | | | |
| 19 | V-TRAN-PADM | V-TRANPAM- | Pad mounted transformers | 0 | 0.25 | 21 | 30 |
| 20 | V-TRAN-PADM-IDEN | V-TRANPAM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 21 | 30 |
| 21 | V-TRAN-POLE | V-TRANPOM- | Pole mounted transformers | 0 | 0.25 | 21 | 30 |
| 22 | V-TRAN-POLE-IDEN | V-TRANPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 21 | 30 |
| **Electrical Support Equipment** | | | | | | | |
| 23 | V-ELEC-JBOX | V-ELECJBM- | Junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.25 | 21 | 30 |
| 24 | V-ELEC-DEVC | V-ELECDEM- | Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers | 0 | 0.25 | 21 | 30 |
| 25 | V-ELEC-SWCH | V-ELECSWM- | Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches | 0 | 0.25 | 21 | 30 |
| 26 | V-ELEC-SUBS | V-ELECSUM- | Other substation equipment | 0 | 0.25 | 21 | 30 |
| **Lights** | | | | | | | |
| 31 | V-LITE-FIXT | V-LITEFXM- | Exterior Lights | 0 | 0.25 | 121 | 15 |
| 32 | V-LITE-FIXT-IDEN | V-LITEFIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 121 | 15 |
| **Utility Poles** | | | | | | | |
| 33 | V-POLE-UTIL | V-POLEUTM- | Utility poles | 0 | 0.25 | G/3 | G/2 |
| 34 | V-POLE-IDEN | V-POLEUIM- | Utility pole identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 35 | V-POLE-GUYS | V-POLEGYM- | Guying equipment | 0 | 0.25 | G/3 | G/2 |
| 36 | V-POLE-GUYS-IDEN | V-POLEGIM- | Guying equipment identifier tags, symbol modifiers, and text | 0 | 0.25 | G/3 | G/2 |
| **Underground Ductbanks (to be used when multiple systems are in one ductbank system)** | | | | | | | |
| 37 | V-DUCT-MULT | V-DUCTMUM- | Ductbank | EUDUCX | 0.25 | 201 | 29 |
| 38 | V-DUCT-MULT-IDEN | V-DUCTMIM- | Identifier tags, symbol modifier and text | 0 | 0.25 | 201 | 29 |
| **Cathodic Protection System** | | | | | | | |
| 40 | V-CATH-ANOD | V-CATHANM- | Sacrificial anode system | 0 | 0.25 | 161 | 25 |
| 41 | V-CATH-CURR | V-CATHCUM- | Impress current system | 0 | 0.25 | 161 | 25 |
| 42 | V-CATH-TEST | V-CATHTEM- | Test stations | 0 | 0.25 | 161 | 25 |
| 43 | V-CATH-IDEN | V-CATHIDM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | 161 | 25 |
| **Special Systems** | | | | | | | |
| 45 | V-SPCL-TRAF | V-SPCLTRM- | Traffic signal system | 0 | 0.25 | 151 | 72 |
| 46 | V-SPCL-TRAF-IDEN | V-SPCLTIM- | Traffic signal identifier tags, symbol modifier, and text | 0 | 0.25 | 151 | 72 |
| 47 | V-SPCL-SYST | V-SPCLSPM- | Special systems (UMCS, EMCS, CATV, etc.) | 0 | 0.25 | 151 | 72 |
| 48 | V-SPCL-IDEN | V-SPCLIDM- | Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text | 0 | 0.25 | 151 | 72 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Communication Systems Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Communications Cables (Copper and Fiber Optic)** | | | | | | | |
| 11 | V-COMM-OVHD | V-COMMOVM- | Overhead communications/telephone lines | COMARX | 0.25 | 81 | 26 |
| 12 | V-COMM-OVHD-IDEN | V-COMMOIM- | Identifier tags, symbol modifier and text | 0 | 0.25 | 81 | 26 |
| 13 | V-COMM-UNDR | V-COMMUNM- | Underground communications/telephone lines | COMUGX | 0.25 | 81 | 26 |
| 14 | V-COMM-UNDR-IDEN | V-COMMUIM- | Identifier tags, symbol modifier and text | 0 | 0.25 | 81 | 26 |
| **Communications Support Equipment** | | | | | | | |
| 23 | V-COMM-JBOX | V-COMMJBM- | Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.25 | 21 | 30 |
| 26 | V-COMM-EQPM | V-COMMEQM- | Other communications distribution equipment | 0 | 0.25 | 21 | 30 |
| **Utility Poles (Use only if different from Existing Electrical Utilities Plan poles)** | | | | | | | |
| 33 | V-POLE-UTIL | V-POLEUTM- | Poles | 0 | 0.25 | G/3 | G/2 |
| 34 | V-POLE-IDEN | V-POLEIDM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 35 | V-POLE-GUYS | V-POLEGYM- | Guying equipment | 0 | 0.25 | G/3 | G/2 |
| 36 | V-POLE-GUYS-IDEN | V-POLEGIM- | Guying equipment identifier tags, symbol modifiers, and text | 0 | 0.25 | G/3 | G/2 |
| **Underground Ductbanks (to be used when multiple systems are in one ductbank system)** | | | | | | | |
| 37 | V-DUCT-MULT | V-DUCTMUM- | Ductbank | EUDUCX | 0.25 | 201 | 29 |
| 38 | V-DUCT-MULT-IDEN | V-DUCTMIM- | Identifier tags, symbol modifier and text | 0 | 0.25 | 201 | 29 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Domestic Water Plan

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-DOMW-DEVC | V-DOMWDEM- | Connectors, faucets, reducers, regulators, vents, intake points, tanks, taps, backflow preventers, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | V-DOMW-HYDR | V-DOMWHYM- | Hydrants | 0 | 0.25 | R/1 | R/3 |
| 13 | V-DOMW-METR | V-DOMWMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| 14 | V-DOMW-NHYD | V-DOMWNHM- | Non-potable hydrants/flushing hydrants | 0 | 0.25 | R/1 | R/3 |
| **Stations** | | | | | | | |
| 16 | V-DOMW-PUMP | V-DOMWPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 17 | V-DOMW-REDC | V-DOMWREM- | Pressure reducing stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-DOMW-STNS-IDEN | V-DOMWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | V-DOMW-RSVR-IDEN | V-DOMWRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 20 | V-DOMW-RSVR | V-DOMWRSM- | Reservoirs | 0 | 0.25 | R/1 | R/3 |
| 21 | V-DOMW-TANK | V-DOMWTAM- | Water storage tanks | 0 | 0.25 | R/1 | R/3 |
| 22 | V-DOMW-WELL | V-DOMWWEM- | Water well houses | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 26 | V-DOMW-PITS-IDEN | V-DOMWPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | V-DOMW-VENT | V-DOMWVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | V-DOMW-VLVE | V-DOMWVLM- | Valve pits/vaults | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-DOMW-ABND | V-DOMWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 37 | V-DOMW-FTTG | V-DOMWFTM- | Caps, cleanouts, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | V-DOMW-IDEN | V-DOMWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-DOMW-MAIN | V-DOMWMAM- | Main domestic water piping | WATRX | 0.35 | M/6 | M/5 |
| 44 | V-DOMW-NPOT | V-DOMWNPM- | Non-potable water piping | NONPOT | 0.35 | M/6 | M/5 |
| 45 | V-DOMW-FIRE | V-DOMWFIM- | Fire lines | FIRE | 0.25 | R/1 | R/3 |
| 46 | V-DOMW-SERV | V-DOMWSEM- | Domestic water service piping | 0 | 0.35 | M/6 | M/5 |
| 47 | V-DOMW-SIGN | V-DOMWSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

**Model File Type: Existing Sanitary Sewer Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-SSWR-DEVC | V-SSWRDEM- | Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | V-SSWR-DEVC-IDEN | V-SSWRDIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 15 | V-SSWR-PLNT | V-SSWRPLM- | Treatment plants | 0 | 0.35 | M/6 | M/5 |
| 16 | V-SSWR-PUMP | V-SSWRPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-SSWR-STNS-IDEN | V-SSWRSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | V-SSWR-RSVR-IDEN | V-SSWRRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 20 | V-SSWR-LAGN | V-SSWRLAM- | Lagoons | 0 | 0.25 | G/3 | G/2 |
| 21 | V-SSWR-TANK | V-SSWRTAM- | Septic tanks | 0 | 0.25 | G/3 | G/2 |
| **Junction Boxes** | | | | | | | |
| 22 | V-SSWR-JBOX | V-SSWRJBM- | Junction boxes and manholes | 0 | 0.25 | R/1 | R/3 |
| 23 | V-SSWR-JBOX-IDEN | V-SSWRJIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| **Filtration/Drainage Areas** | | | | | | | |
| 26 | V-SSWR-FILT | V-SSWRFIM- | Filtration beds | 0 | 0.25 | G/3 | G/2 |
| 27 | V-SSWR-FILT-IDEN | V-SSWRFDM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 28 | V-SSWR-NITF | V-SSWRNIM- | Nitrification drain fields | 0 | 0.25 | G/3 | G/2 |
| 29 | V-SSWR-LEAC | V-SSWRLEM- | Leach field | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-SSWR-ABND | V-SSWRABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-SSWR-FLOW | V-SSWRFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | V-SSWR-FTTG | V-SSWRFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | V-SSWR-IDEN | V-SSWRIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-SSWR-MAIN | V-SSWRMAM- | Sanitary sewer piping | SSWAFX | 0.35 | M/6 | M/5 |
| 46 | V-SSWR-SERV | V-SSWRSEM- | Sanitary sewer service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | V-SSWR-SIGN | V-SSWRSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Storm Sewer Plan

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-STRM-DEVC | V-STRMDEM- | Downspouts, flumes, oil/water separators, and flap gates | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 16 | V-STRM-PUMP | V-STRMPUM- | Pump stations | 0 | 0.35 | M/6 | M/5 |
| 17 | V-STRM-FMON | V-STRMFMM- | Flow monitoring station | 0 | 0.35 | M/6 | M/5 |
| 18 | V-STRM-STNS-IDEN | V-STRMSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs/Watersheds** | | | | | | | |
| 19 | V-STRM-RSVR-IDEN | V-STRMRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 20 | V-STRM-LAGN | V-STRMLAM- | Lagoons, ponds, watersheds, and basins | 0 | 0.25 | G/3 | G/2 |
| 21 | V-STRM-AFFF | V-STRMAFM- | AFFF lagoon/detention pond | 0 | 0.25 | G/3 | G/2 |
| **Drainage Structures** | | | | | | | |
| 22 | V-STRM-MHOL | V-STRMMHM- | Manholes | 0 | 0.25 | R/1 | R/3 |
| 26 | V-STRM-DRAN-IDEN | V-STRMDRM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 27 | V-STRM-EROS | V-STRMERM- | Erosion control (riprap) | 0 | 0.18 | B/5 | B/1 |
| 28 | V-STRM-CHUT | V-STRMCHM- | Chutes and concrete erosion control structures | 0 | 0.25 | R/1 | R/3 |
| 29 | V-STRM-HDWL | V-STRMHDM- | Headwalls and endwalls | 0 | 0.70 | W/7 | W/0 |
| 30 | V-STRM-INLT | V-STRMINM- | Inlets (curb, surface, and catch basins) | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-STRM-ABND | V-STRMABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-STRM-FLOW | V-STRMFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | V-STRM-FTTG | V-STRMFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | V-STRM-IDEN | V-STRMIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 42 | V-STRM-CULV | V-STRMCLM- | Culverts | 0 | 0.25 | G/3 | G/2 |
| 43 | V-STRM-MAIN | V-STRMMAM- | Storm sewer piping | STRAFX | 0.35 | M/6 | M/5 |
| 44 | V-STRM-SUBS | V-STRMSUM- | Subsurface drain piping | 0 | 0.25 | G/3 | G/2 |
| 45 | V-STRM-ROOF | V-STRMROM- | Roof drain line | 0 | 0.25 | G/3 | G/2 |
| 46 | V-STRM-SERV | V-STRMSEM- | Storm sewer service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | V-STRM-SIGN | V-STRMSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Survey/Mapping

**Model File Type: Existing Industrial Waste Water Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-INDW-DEVC | V-INDWDEM- | Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 15 | V-INDW-PLNT | V-INDWPLM- | Treatment plants | 0 | 0.35 | M/6 | M/5 |
| 16 | V-INDW-LIFT | V-INDWLIM- | Lift stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-INDW-STNS-IDEN | V-INDWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | V-INDW-RSVR-IDEN | V-INDWRIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| 20 | V-INDW-LAGN | V-INDWLAM- | Lagoons | 0 | 0.35 | M/6 | M/5 |
| **Junction Boxes** | | | | | | | |
| 22 | V-INDW-JBOX | V-INDWJBM- | Junction boxes and manholes | 0 | 0.25 | R/1 | R/3 |
| **Piping** | | | | | | | |
| 32 | V-INDW-ABND | V-INDWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-INDW-FLOW | V-INDWFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | V-INDW-FITG | V-INDWFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | V-INDW-IDEN | V-INDWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-INDW-MAIN | V-INDWMAM- | Main industrial waste water piping | IWASTE | 0.35 | M/6 | M/5 |
| 46 | V-INDW-SERV | V-INDWSEM- | Industrial waste water service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | V-INDW-SIGN | V-INDWSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Natural Gas Utilities Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-NGAS-DEVC | V-NGASDEM- | Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | V-NGAS-DEVC-IDEN | V-NGASDIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| 13 | V-NGAS-METR | V-NGASMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| **Stations** | | | | | | | |
| 16 | V-NGAS-PUMP | V-NGASPUM- | Compressor stations | 0 | 0.35 | M/6 | M/5 |
| 17 | V-NGAS-REDC | V-NGASREM- | Reducing stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-NGAS-STNS-IDEN | V-NGASSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Pits** | | | | | | | |
| 26 | V-NGAS-PITS-IDEN | V-NGASPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | V-NGAS-VENT | V-NGASVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | V-NGAS-VLVE | V-NGASVLM- | Valve pits/boxes | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-NGAS-ABND | V-NGASABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-NGAS-FLOW | V-NGASFLM- | Flow direction arrows | 0 | 0.25 | M/6 | M/5 |
| 37 | V-NGAS-FTTG | V-NGASFTM- | Caps, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | V-NGAS-IDEN | V-NGASIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-NGAS-MAIN | V-NGASMAM- | Main natural gas piping | NTGASX | 0.35 | M/6 | M/5 |
| 46 | V-NGAS-SERV | V-NGASSEM- | Service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | V-NGAS-SIGN | V-NGASSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

**Model File Type: Existing Liquid Fuel Utilities Plan**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-FUEL-DEVC | V-FUELDEM- | Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves | 0 | 0.35 | M/6 | M/5 |
| 13 | V-FUEL-METR | V-FUELMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| **Stations** | | | | | | | |
| 16 | V-FUEL-PUMP | V-FUELPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-FUEL-STNS-IDEN | V-FUELSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 21 | V-FUEL-TANK | V-FUELTAM- | Fuel tanks | 0 | 0.25 | G/3 | G/2 |
| **Junction Boxes** | | | | | | | |
| 22 | V-FUEL-JBOX | V-FUELJBM- | Junction boxes, manholes, handholes, test boxes | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 25 | V-FUEL-HYDR | V-FUELHYM- | Hydrant control pits | 0 | 0.25 | G/3 | G/2 |
| 26 | V-FUEL-PITS-IDEN | V-FUELPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | V-FUEL-VENT | V-FUELVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | V-FUEL-VLVE | V-FUELVLM- | Valve pits | 0 | 0.25 | G/3 | G/2 |
| 29 | V-FUEL-TRCH | V-FUELTRM- | Fuel line trench | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-FUEL-ABND | V-FUELABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-FUEL-FLOW | V-FUELFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 36 | V-FUEL-DEFL | V-FUELDEM- | Defueling piping | 0 | 0.35 | M/6 | M/5 |
| 37 | V-FUEL-FTTG | V-FUELFTM- | Caps, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | V-FUEL-IDEN | V-FUELIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | V-FUEL-MAIN | V-FUELMAM- | Main fuel piping | LIQPET | 0.35 | M/6 | M/5 |
| 46 | V-FUEL-SERV | V-FUELSEM- | Service piping | 0 | 0.35 | M/6 | M/5 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing HTCW Utilities Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | V-ALGN-DATA | V-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | V-ALGN-LINE | V-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | V-ALGN-STAT | V-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | V-HTCW-DEVC | V-HTCWDEM- | Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 16 | V-HTCW-PUMP | V-HTCWPUM- | Pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | V-HTCW-STNS-IDEN | V-HTCWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Plants** | | | | | | | |
| 19 | V-HTCW-CHLP | V-HTCWCPM- | Chilled water plant | 0 | 0.35 | M/6 | M/5 |
| 20 | V-HTCW-HTPP | V-HTCWHPM- | High temperature water plant | 0 | 0.35 | M/6 | M/5 |
| 21 | V-HTCW-PLNT-IDEN | V-HTCWPIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Junction Boxes** | | | | | | | |
| 22 | V-HTCW-JBOX | V-HTCWJBM- | Junction boxes, manholes, handholes, test boxes | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 25 | V-HTCW-PITS | V-HTCWPTM- | Valve pits/vaults, steam pits | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | V-HTCW-ABND | V-HTCWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | V-HTCW-FLOW | V-HTCWFLM- | Flow direction arrows | 0 | 0.25 | G/3 | G/2 |
| 34 | V-HTCW-CHLL | V-HTCWCHM- | Main chilled water piping | 0 | 0.35 | M/6 | M/5 |
| 35 | V-HTCW-CHLS | V-HTCWCSM- | Chilled water service piping | 0 | 0.25 | G/3 | G/2 |
| 37 | V-HTCW-FTTG | V-HTCWFTM- | Caps and flanges | 0 | 0.35 | M/6 | M/5 |
| 38 | V-HTCW-HTPL | V-HTCWHTM- | Main high temperature piping | 0 | 0.25 | R/1 | R/3 |
| 39 | V-HTCW-HTPS | V-HTCWHSM- | High temperature service piping | 0 | 0.25 | G/3 | G/2 |
| 40 | V-HTCW-IDEN | V-HTCWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 41 | V-HTCW-LTPL | V-HTCWLTM- | Main low temperature piping | 0 | 0.35 | Y/2 | Y/4 |
| 42 | V-HTCW-LTPS | V-HTCWLSM- | Low temperature service piping | 0 | 0.25 | G/3 | G/2 |
| 45 | V-HTCW-RTRN | V-HTCWRTM- | Return for all HTCW lines | 0 | 0.18 | B/5 | B/1 |
| 48 | V-HTCW-STML | V-HTCWSTM- | Main steam piping | 0 | 0.25 | R/1 | R/3 |
| 49 | V-HTCW-STMS | V-HTCWSSM- | Steam service piping | 0 | 0.25 | G/3 | G/2 |
| **Geothermal Heat Pump System** | | | | | | | |
| 50 | V-GTHP-EQPM | V-GTHPEQM- | Equipment | 0 | 0.35 | M/6 | M/5 |
| 51 | V-GTHP-PIPE | V-GTHPPIM- | Piping (includes fittings, valves) | 0 | 0.35 | M/6 | M/5 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Airfield Lighting Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Airfield Lighting Circuits** | | | | | | | |
| 11 | V-CIRC-SERS | V-CIRCSEM- | Series circuits | 0 | 0.35 | 82 | 18 |
| 12 | V-CIRC-MULT | V-CIRCMUM- | Multiple circuits | 0 | 0.35 | 22 | 22 |
| 13 | V-CIRC-CTRL | V-CIRCCTM- | Control and monitoring circuits | 0 | 0.35 | 12 | 27 |
| 15 | V-CIRC-IDEN | V-CIRCIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Devices** | | | | | | | |
| 20 | V-AIRF-DEVC | V-AIRFDEM- | Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers | 0 | 0.35 | M/6 | M/5 |
| **Junction Boxes** | | | | | | | |
| 23 | V-AIRF-JBOX | V-AIRFJBM- | Junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.25 | R/1 | R/3 |
| **Lights** | | | | | | | |
| 25 | V-LITE-OBST | V-LITEOBM- | Obstruction lights | 0 | 0.35 | Y/2 | Y/4 |
| 26 | V-LITE-DIST | V-LITEDIM- | Distance and arresting gear markers | 0 | 0.35 | M/6 | M/5 |
| 28 | V-LITE-APPR | V-LITEAPM- | Approach lights | 0 | 0.35 | M/6 | M/5 |
| 29 | V-LITE-THRS | V-LITETHM- | Threshold lights | 0 | 0.35 | M/6 | M/5 |
| 30 | V-LITE-RUNW | V-LITERUM- | Runway lights | 0 | 0.35 | M/6 | M/5 |
| 31 | V-LITE-TAXI | V-LITETAM- | Taxiway lights | 0 | 0.35 | M/6 | M/5 |
| 32 | V-LITE-LANE | V-LITELAM- | Hoverlane, taxilane, and helipad lights | 0 | 0.35 | M/6 | M/5 |
| 33 | V-LITE-SIGN | V-LITESIM- | Taxiway guidance signs | 0 | 0.35 | M/6 | M/5 |
| **Ductbank** | | | | | | | |
| 37 | V-AIRF-DUCT | V-AIRFDUM- | Ductbanks | 0 | 0.25 | G/3 | G/2 |
| **Beacons** | | | | | | | |
| 42 | V-BCNS-IDEN | V-BCNSIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| 43 | V-BCNS-STRB | V-BCNSSTM- | Strobe beacons | 0 | 0.35 | M/6 | M/5 |
| 44 | V-BCNS-MISC | V-BCNSMIM- | Miscellaneous navaids - windcones and beacons | 0 | 0.35 | M/6 | M/5 |

Note: V = Varies, NA = Not Applicable

## Discipline: Survey/Mapping

### Model File Type: Existing Profiles

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Crossing Elements - Use symbology from previous model files** | | | | | | | |
| **Grade Linework** | | | | | | | |
| 41 | V-GRAD-FNSH | V-GRADFNM- | Finished grade | 0 | 0.50 | C/4 | C/7 |
| 44 | V-GRAD-EXST | V-GRADEXM- | Existing grade, ground line | 3 | 0.35 | M/6 | M/5 |
| **Grid Lines** | | | | | | | |
| 48 | V-GRID-MAJR | V-GRIDMAM- | Major grid lines | 0 | 0.25 | R/1 | R/3 |
| 49 | V-GRID-MINR | V-GRIDMIM- | Minor grid lines | 1 | 0.18 | Gr/8 | Gr/9 |
| 50 | V-GRID-FRAM | V-GRIDFRM- | Frame | 0 | 0.50 | C/4 | C/7 |
| 51 | V-GRID-TEXT | V-GRIDTEM- | Border text, annotation | 0 | 0.35 | Y/2 | Y/4 |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Survey/Mapping

**Model File Type: Existing X-Sections**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-NPLT | V-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | V-ANNO-PATT | V-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | V-ANNO-REFR | V-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Crossing Elements - Use symbology from previous model files** | | | | | | | |
| **Sections** | | | | | | | |
| 35 | V-SECT-IDEN | V-SECTIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 36 | V-SECT-MBND | V-SECTMBM- | Material beyond section cut | 0 | 0.18 | B/5 | B/1 |
| 37 | V-SECT-MCUT | V-SECTMCM- | Material cut by section | 0 | 0.50 | C/4 | C/7 |
| 38 | V-SECT-PATT | V-SECTPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| **Grade Linework** | | | | | | | |
| 41 | V-GRAD-FNSH | V-GRADFNM- | Finished grade | 0 | 0.50 | C/4 | C/7 |
| 44 | V-GRAD-EXST | V-GRADEXM- | Existing grade, ground line | 3 | 0.35 | M/6 | M/5 |
| **Grid Lines** | | | | | | | |
| 48 | V-GRID-MAJR | V-GRIDMAM- | Major grid lines | 0 | 0.25 | R/1 | R/3 |
| 49 | V-GRID-MINR | V-GRIDMIM- | Minor grid lines | 1 | 0.18 | Gr/8 | Gr/9 |
| 50 | V-GRID-FRAM | V-GRIDFRM- | Frame | 0 | 0.50 | C/4 | C/7 |
| 51 | V-GRID-TEXT | V-GRIDTEM- | Border text, annotation | 0 | 0.35 | Y/2 | Y/4 |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Geotechnical

### Model File Type: Boring Location Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | B-ANNO-DIMS | B----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | B-ANNO-KEYN | B----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | B-ANNO-NPLT | B----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | B-ANNO-PATT | B----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | B-ANNO-NOTE | B----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | B-ANNO-SYMB | B----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | B-ANNO-TEXT | B----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | B-ANNO-REFR | B----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Borings/Perc Holes** | | | | | | | |
| 12 | B-BORE-HOLE | B-BOREHOM- | Bore/perc hole locations | 0 | 0.35 | Y/2 | Y/4 |
| 13 | B-BORE-IDEN | B-BOREIDM- | Bore/perc hole numbers | 0 | 0.35 | Y/2 | Y/4 |

Note: V = Varies, NA = Not Applicable

## Discipline: Geotechnical

### Model File Type: Boring Log

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | B-ANNO-DIMS | B----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | B-ANNO-KEYN | B----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | B-ANNO-NPLT | B----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | B-ANNO-PATT | B----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | B-ANNO-NOTE | B----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | B-ANNO-SYMB | B----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | B-ANNO-TEXT | B----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | B-ANNO-REFR | B----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Borings/Perc Holes** | | | | | | | |
| 10 | B-BORE-ELEV | B-BOREELM- | Boring elevations | 0 | 0.25 | G/3 | G/2 |
| 11 | B-BORE-FDTA | B-BOREFDM- | Field data | 0 | 0.25 | G/3 | G/2 |
| 12 | B-BORE-HOLE | B-BOREHOM- | Bore/perc hole number | 0 | 0.35 | Y/2 | Y/4 |
| 13 | B-BORE-IDEN | B-BOREIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 14 | B-BORE-LDTA | B-BORELDM- | Laboratory data | 0 | 0.25 | R/1 | R/3 |
| 15 | B-BORE-PATT | B-BOREPAM- | Soil/rock patterns | 0 | 0.18 | Gr/8 | Gr/9 |

Note: V = Varies, NA = Not Applicable

## Discipline: Civil

### Model File Type: Site Plan

| | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C---DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C---KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C---NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C---PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C---NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C---SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C---TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C---RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Buildings and Structures** | | | | | | | |
| 11 | C-BLDG-OTLN | C-BLDGOTM- | Buildings and other structures | 0 | 0.70 | W/7 | W/0 |
| 12 | C-BLDG-IDEN | C-BLDGIDM- | Building and other stucture annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Site Improvement** | | | | | | | |
| 13 | C-SITE-FENC | C-SITEFEM- | Fences and handrails | 0, FENCE | 0.35 | M/6 | M/5 |
| 14 | C-SITE-FENC-IDEN | C-SITEFIM- | Fence, handrail, ramp, sign, and trail annotation | 0 | 0.35 | M/6 | M/5 |
| 15 | C-SITE-STRC | C-SITESRM- | Structures (bridges, sheds, foundation pads, footings, etc.) | 0 | 0.35 | 22 | 22 |
| 16 | C-SITE-IDEN | C-SITEIDM- | Site improvement annotation | 0 | 0.35 | M/6 | M/5 |
| 17 | C-SITE-IMPR | C-SITEIMM- | Site improvements (channel or levee features) | 0 | 0.50 | C/4 | C/7 |
| 18 | C-SITE-EROS | C-SITEERM- | Riprap, revetments/stone protection, breakwaters, dikes, jetties, and drains | 0 | 0.25 | R/1 | R/3 |
| 19 | C-SITE-EROS-IDEN | C-SITEEIM- | Riprap, revetment/stone protection, breakwater, dike, jetty, and drain annotation | 0 | 0.35 | 12 | 27 |
| 20 | C-SITE-STRS | C-SITESTM- | Stairs and ramps | 0 | 0.35 | M/6 | M/5 |
| 21 | C-SITE-WALK | C-SITEWAM- | Walks, trails and bicycle paths | V | 0.35 | Y/2 | Y/4 |
| **Property** | | | | | | | |
| 25 | C-PROP-ESMT | C-PROPESM- | Easements | 3 | 0.70 | 84 | 34 |
| 26 | C-PROP-CONS | C-PROPCOM- | Construction limits/controls, staging area | 11 | 0.70 | W/7 | W/0 |
| 27 | C-PROP-RWAY | C-PROPRWM- | Right of ways | RTOFWY | 0.70 | W/7 | W/0 |
| 28 | C-PROP-IDEN | C-PROPIDM- | Property annotation | 0 | 0.35 | M/6 | M/5 |
| **Storm Drainage (for more detailed storm drainage, use the Civil - Storm Drainage model file)** | | | | | | | |
| 30 | C-STRM-STRC | C-STRMSTM- | Storm drainage, headwalls, inlets, manholes, culverts, and drainage structures | 0, STRAF | 0.50 | C/4 | C/7 |
| 31 | C-STRM-IDEN | C-STRMIDM- | Storm drainage, headwall, inlet, manhole, culvert, and drainage structure annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Pavements/Transportation (for more detailed transportation, use the Civil - Transportation Site Plan model file)** | | | | | | | |
| 34 | C-PVMT-ROAD | C-PVMTROM- | Roads, parking lots, railroads, airfield pavements | 0, RAILRD | 0.35 | Y/2 | Y/4 |
| 35 | C-PVMT-IDEN | C-PVMTIDM- | Road, parking lot, railroad, airfield pavement annotation | 0 | 0.35 | Y/2 | Y/4 |
| 36 | C-PVMT-PATT | C-PVMTPAM- | Joint patterns, text and dimensions | 0 | 0.35 | Y/2 | Y/4 |
| 37 | C-PVMT-MRKG | C-PVMTMRM- | Pavement markings and signs | 0 | 0.35 | Y/2 | Y/4 |
| **Secondary Alignments** | | | | | | | |
| 38 | C-ALGN-SECD | C-ALGNSCM- | Secondary alignments | 0 | 0.25 | G/3 | G/2 |
| 39 | C-ALGN-SECD-IDEN | C-ALGNSIM- | Alignment stationing and tick marks | 0 | 0.35 | 82 | 18 |
| **Topography** | | | | | | | |
| 40 | C-TOPO-COOR | C-TOPOCOM- | Coordinate grid ticks and text | 0 | 0.35 | 122 | 23 |
| 41 | C-TOPO-MAJR-IDEN | C-TOPOMAM- | Major contours - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 42 | C-TOPO-MAJR | C-TOPOMJM- | Major contours | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-TOPO-MINR-IDEN | C-TOPOMIM- | Minor contours - annotation | 0 | 0.25 | G/3 | G/2 |
| 44 | C-TOPO-MINR | C-TOPOMNM- | Minor contours | 0 | 0.25 | G/3 | G/2 |
| 46 | C-TOPO-SLOP-IDEN | C-TOPOSLM- | Cut/fill slope, top/toe slope annotation | 0 | 0.35 | Y/2 | Y/4 |
| 47 | C-TOPO-SLOP-FILL | C-TOPOSFM- | Cut/fill slopes | 0 | 0.35 | Y/2 | Y/4 |
| 48 | C-TOPO-SPOT | C-TOPOSPM- | Spot elevations | 0 | 0.35 | Y/2 | Y/4 |
| 49 | C-TOPO-SLOP-TOPT | C-TOPOSTM- | Top/toe slopes | 0 | 0.35 | M/6 | M/5 |

**Discipline: Civil**

**Model File Type: Site Plan**

| Demolition (used only in creating Existing/Demolition model files) | | | | | | | |
|---|---|---|---|---|---|---|---|
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Grading Plan**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning, cross-hatching, poche | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Borrow Areas** | | | | | | | |
| 21 | C-BORW-LINE | C-BORWLNM- | Borrow/Spoil area | 2 | 0.35 | Y/2 | Y/4 |
| 22 | C-BORW-IDEN | C-BORWIDM- | Borrow/Spoil area annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Topography** | | | | | | | |
| 40 | C-TOPO-COOR | C-TOPOCOM- | Coordinate grid ticks and text | 0 | 0.35 | 122 | 23 |
| 41 | C-TOPO-MAJR-IDEN | C-TOPOMAM- | Major contours - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 42 | C-TOPO-MAJR | C-TOPOMJM- | Major contours | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-TOPO-MINR-IDEN | C-TOPOMIM- | Minor contours - annotation | 0 | 0.25 | G/3 | G/2 |
| 44 | C-TOPO-MINR | C-TOPOMNM- | Minor contours | 0 | 0.25 | G/3 | G/2 |
| 46 | C-TOPO-SLOP-IDEN | C-TOPOSIM- | Cut/fill slope, top/toe slope annotation | 0 | 0.35 | Y/2 | Y/4 |
| 47 | C-TOPO-SLOP-FILL | C-TOPOSFM- | Cut/fill slopes | 0 | 0.35 | Y/2 | Y/4 |
| 48 | C-TOPO-SPOT | C-TOPOSPM- | Spot elevations | 0 | 0.35 | Y/2 | Y/4 |
| 49 | C-TOPO-SLOP-TOPT | C-TOPOSTM- | Top/toe slopes | 0 | 0.35 | M/6 | M/5 |
| 50 | C-TOPO-BKLN | C-TOPOBKM- | Breaklines | 4 | 0.70 | W/7 | W/0 |
| 51 | C-TOPO-DTMT | C-TOPODTM- | DTM triangles | 0 | 0.35 | 22 | 22 |
| 52 | C-TOPO-DTMP | C-TOPODPM- | DTM points | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Dredging Plan**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Survey Lines** | | | | | | | |
| 8 | C-SURV-DATA | C-SURVDAM- | Survey data (benchmarks and horizontal control points or monuments) | 0 | 0.35 | M/6 | M/5 |
| 9 | C-SURV-LINE | C-SURVLIM- | Survey, baseline, and control lines | 2 | 0.50 | C/4 | C/7 |
| 10 | C-SURV-IDEN | C-SURVIDM- | Survey, baseline, and control line annotation | 0 | 0.35 | M/6 | M/5 |
| **Structures** | | | | | | | |
| 11 | C-STRC-OTLN | C-STRCOTM- | Bridges, piers, breakwaters, docks, floats, etc. - outlines | 0 | 0.50 | C/4 | C/7 |
| 12 | C-STRC-IDEN | C-STRCIDM- | Bridges, piers, breakwaters, docks, floats, etc. - annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Channels** | | | | | | | |
| 14 | C-CHAN-LIMT | C-CHANLIM- | Channel limits, anchorages, turning basins, disposal areas, etc. | 0 | 0.35 | M/6 | M/5 |
| 15 | C-CHAN-IDEN | C-CHANIDM- | Channel limits, anchorages, turning basins, disposal areas, etc. - annota | 0 | 0.35 | M/6 | M/5 |
| 16 | C-CHAN-DACL | C-CHANDAM- | De-authorized channel limits, anchorages, etc. | 0 | 0.25 | G/3 | G/2 |
| 17 | C-CHAN-DACL-IDEN | C-CHANDIM- | De-authorized channel limits, anchorages, etc. - annotation | 0 | 0.25 | G/3 | G/2 |
| 18 | C-CHAN-CNTR | C-CHANCNM- | Channel centerline and survey report lines | 4 | 0.18 | B/5 | B/1 |
| 19 | C-CHAN-CNTR-IDEN | C-CHANCIM- | Channel centerline and survey report lines - annotation | 0 | 0.18 | B/5 | B/1 |
| 20 | C-CHAN-AIDS | C-CHANAIM- | Navigation aids and text | 0 | 0.35 | Y/2 | Y/4 |
| 21 | C-CHAN-TURN | C-CHANTUM- | Turning points | 0 | 0.35 | Y/2 | Y/4 |
| **Dredging** | | | | | | | |
| 25 | C-DRED-LIMT | C-DREDLIM- | Dredge limit lines | 0 | 0.50 | C/4 | C/7 |
| 26 | C-DRED-OHWM | C-DREDOHM- | Ordinary high water marks | 0 | 0.35 | Y/2 | Y/4 |
| **Topography** | | | | | | | |
| 39 | C-TOPO-BORE | C-TOPOBOM- | Boring locations | 0 | 0.35 | M/6 | M/5 |
| 40 | C-TOPO-COOR | C-TOPOCOM- | Coordinate grid ticks and text | 0 | 0.35 | 122 | 23 |
| 41 | C-TOPO-MAJR-IDEN | C-TOPOMAM- | Major contours - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 42 | C-TOPO-MAJR | C-TOPOMJM- | Major contours | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-TOPO-MINR-IDEN | C-TOPOMIM- | Minor contours - annotation | 0 | 0.25 | G/3 | G/2 |
| 44 | C-TOPO-MINR | C-TOPOMNM- | Minor contours | 0 | 0.25 | G/3 | G/2 |
| 45 | C-TOPO-SHOR | C-TOPOSHM- | Shorelines, land features, and references | 0 | 0.50 | C/4 | C/7 |
| 49 | C-TOPO-SOUN | C-TOPOSOM- | Soundings | 0 | 0.18 | 150 | 40 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Transportation Site Plan**

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Major Roads** | | | | | | | |
| 11 | C-ROAD-CNTR-IDEN | C-ROADCIM- | Centerline annotation | 0 | 0.35 | M/6 | M/5 |
| 12 | C-ROAD-CNTR | C-ROADCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 13 | C-ROAD-CURB | C-ROADCUM- | Curbs | 0 | 0.35 | M/6 | M/5 |
| 14 | C-ROAD-GRAL | C-ROADGRM- | Guardrails | 0 | 0.35 | M/6 | M/5 |
| 15 | C-ROAD-IDEN | C-ROADIDM- | Road, curb, and guardrail annotation | 0 | 0.35 | M/6 | M/5 |
| 16 | C-ROAD-OTLN | C-ROADOTM- | Roads | 0 | 0.50 | C/4 | C/7 |
| **Parking Lots and Minor Roads** | | | | | | | |
| 21 | C-PKNG-CARS | C-PKNGCAM- | Graphic illustration of cars | 0 | 0.35 | Y/2 | Y/4 |
| 22 | C-PKNG-CNTR-IDEN | C-PKNGCIM- | Centerline annotation | 0 | 0.35 | M/6 | M/5 |
| 23 | C-PKNG-CNTR | C-PKNGCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 24 | C-PKNG-CURB | C-PKNGCUM- | Curbs and gutters | 0 | 0.25 | G/3 | G/2 |
| 25 | C-PKNG-DRAN | C-PKNGDRM- | Parking lot drainage slope indications | 0 | 0.25 | R/1 | R/3 |
| 26 | C-PKNG-IDEN | C-PKNGIDM- | Parking lot, minor road, and curb annotation | 0 | 0.35 | M/6 | M/5 |
| 27 | C-PKNG-FIXT | C-PKNGFIM- | Parking lot fixtures (e.g., wheel stops, parking meters) | 0 | 0.25 | 91 | 106 |
| 28 | C-PKNG-OTLN | C-PKNGOTM- | Parking lots and minor roads | 0 | 0.50 | C/4 | C/7 |
| **Railroads** | | | | | | | |
| 32 | C-RAIL-EQPM | C-RAILEQM- | Railroad equipment (e.g., gates, signals) | 0 | 0.25 | 91 | 106 |
| 33 | C-RAIL-CNTR-IDEN | C-RAILCIM- | Centerline annotation | 0 | 0.35 | M/6 | M/5 |
| 34 | C-RAIL-CNTR | C-RAILCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 35 | C-RAIL-IDEN | C-RAILIDM- | Railroad - annotation | 0 | 0.35 | M/6 | M/5 |
| 36 | C-RAIL-TRAK | C-RAILTRM- | Railroads | 0 | 0.35 | Y/2 | Y/4 |
| **Signage and Pavement Markings** | | | | | | | |
| 37 | C-PVMT-MRKG | C-PVMTMRM- | Pavement markings and traffic signs | 0 | 0.35 | Y/2 | Y/4 |
| 38 | C-PVMT-SIGN | C-PVMTSIM- | Other signs | 0 | 0.35 | Y/2 | Y/4 |
| **Pavement Types** | | | | | | | |
| 41 | C-PVMT-ASPH | C-PVMTASM- | Pavement pattern - asphalt | 0 | 0.18 | Gr/8 | Gr/9 |
| 42 | C-PVMT-CONC | C-PVMTCOM- | Pavement pattern - concrete | 0 | 0.18 | Gr/8 | Gr/9 |
| 43 | C-PVMT-GRVL | C-PVMTGRM- | Pavement pattern - gravel | 0 | 0.18 | Gr/8 | Gr/9 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Joint Layout Plan**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Joints** | | | | | | | |
| 11 | C-JOIN-CNSL | C-JOINSLM- | Construction joints - longitudinal | 0 | 0.35 | M/6 | M/5 |
| 12 | C-JOIN-CNST | C-JOINSTM- | Construction joints - transverse | 0 | 0.35 | M/6 | M/5 |
| 13 | C-JOIN-CNTL | C-JOINTLM- | Contraction joints - longitudinal | 0 | 0.35 | Y/2 | Y/4 |
| 14 | C-JOIN-CNTT | C-JOINTTM- | Contraction joints - transverse | 0 | 0.35 | Y/2 | Y/4 |
| 15 | C-JOIN-EXPN | C-JOINEXM- | Expansion joints | 0 | 0.35 | 12 | 27 |
| 16 | C-JOIN-EDGE | C-JOINEDM- | Thickened edges | 0 | 0.50 | C/4 | C/7 |
| **Pavements** | | | | | | | |
| 36 | C-PVMT-PATT | C-PVMTPAM- | Reinforced pavement pattern | 0 | 0.18 | Gr/8 | Gr/9 |
| **Topography** | | | | | | | |
| 48 | C-TOPO-SPOT | C-TOPOSPM- | Spot elevations | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Airfield Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Taxiway** | | | | | | | |
| 11 | C-TAXI-CNTR-IDEN | C-TAXICIM- | Centerline annotation | 0 | 0.35 | Y/2 | Y/4 |
| 12 | C-TAXI-CNTR | C-TAXICTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 13 | C-TAXI-IDEN | C-TAXIIDM- | Taxiway - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 15 | C-TAXI-OTLN | C-TAXIOTM- | Taxiway - outlines | 0 | 0.50 | C/4 | C/7 |
| 16 | C-TAXI-SHLD | C-TAXISHM- | Shoulders with annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Apron** | | | | | | | |
| 18 | C-APRN-CNTR-IDEN | C-APRNCIM- | Centerline annotation | 0 | 0.35 | Y/2 | Y/4 |
| 19 | C-APRN-CNTR | C-APRNCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 20 | C-APRN-IDEN | C-APRNIDM- | Airfield apron - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 22 | C-APRN-OTLN | C-APRNOTM- | Airfield apron - outlines | 0 | 0.50 | C/4 | C/7 |
| 23 | C-APRN-SHLD | C-APRNSHM- | Shoulders with annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Overrun Areas** | | | | | | | |
| 25 | C-OVRN-CNTR-IDEN | C-OVRNCIM- | Centerline annotation | 0 | 0.35 | Y/2 | Y/4 |
| 26 | C-OVRN-CNTR | C-OVRNCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 27 | C-OVRN-IDEN | C-OVRNIDM- | Airfield overrun area - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 29 | C-OVRN-OTLN | C-OVRNOTM- | Airfield overrun area - outlines | 0 | 0.50 | C/4 | C/7 |
| **Airfield Traffic Types** | | | | | | | |
| 31 | C-TRAF-TYPA | C-TRAFTAM- | Type A traffic area | 4 | 0.50 | C/4 | C/7 |
| 32 | C-TRAF-TYPB | C-TRAFTBM- | Type B traffic area | 6 | 0.50 | C/4 | C/7 |
| 33 | C-TRAF-TYPC | C-TRAFTCM- | Type C traffic area | 10 | 0.50 | C/4 | C/7 |
| 34 | C-TRAF-IDEN | C-TRAFIDM- | Airfield traffic area annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Runway** | | | | | | | |
| 35 | C-RUNW-CNTR | C-RUNWCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 36 | C-RUNW-IDEN | C-RUNWIDM- | Airfield runway annotation | 0 | 0.35 | Y/2 | Y/4 |
| 37 | C-RUNW-EDGE | C-RUNWRUM- | Airfield runway edges | 0 | 0.35 | M/6 | M/5 |
| **Obstructions** | | | | | | | |
| 40 | C-OBST-AIRS | C-OBSTAIM- | Airspace obstructions | 0 | 0.25 | G/3 | G/2 |
| **Pavement Types** | | | | | | | |
| 41 | C-PVMT-ASPH | C-PVMTASM- | Pavement pattern - asphalt | 0 | 0.18 | Gr/8 | Gr/9 |
| 42 | C-PVMT-CONC | C-PVMTCOM- | Pavement pattern - concrete | 0 | 0.18 | Gr/8 | Gr/9 |
| 43 | C-PVMT-GRVL | C-PVMTGRM- | Pavement pattern - gravel | 0 | 0.18 | Gr/8 | Gr/9 |
| **Pads (Arm/Disarm, Calibration, etc.)** | | | | | | | |
| 45 | C-PADS-CNTR-IDEN | C-PADSCIM- | Centerline annotation | 0 | 0.35 | Y/2 | Y/4 |
| 46 | C-PADS-CNTR | C-PADSCTM- | Centerlines | 7 | 0.25 | R/1 | R/3 |
| 47 | C-PADS-IDEN | C-PADSIDM- | Pads - annotation | 0 | 0.35 | Y/2 | Y/4 |
| 48 | C-PADS-OTLN | C-PADSOTM- | Pad - outlines | 0 | 0.50 | C/4 | C/7 |
| 49 | C-PADS-SHLD | C-PADSSHM- | Shoulders with annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note:** V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Airfield Pavement Marking Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Taxiway** | | | | | | | |
| 12 | C-TAXI-CNTR | C-TAXICTM- | Centerline markings | 0 | 0.25 | R/1 | R/3 |
| 13 | C-TAXI-IDEN | C-TAXIIDM- | Annotation | 0 | 0.35 | Y/2 | Y/4 |
| 14 | C-TAXI-HOLD | C-TAXIHOM- | Holding lines | 0 | 0.35 | Y/2 | Y/4 |
| 15 | C-TAXI-EDGE | C-TAXIEDM- | Edge markings | 0 | 0.50 | C/4 | C/7 |
| 16 | C-TAXI-SHLD | C-TAXISHM- | Shoulder transverse stripes | 0 | 0.35 | Y/2 | Y/4 |
| **Apron** | | | | | | | |
| 18 | C-APRN-GRND | C-APRNGRM- | Grounding points | 0 | 0.35 | Y/2 | Y/4 |
| 19 | C-APRN-HOLD | C-APRNHOM- | Holding position markings | 0 | 0.25 | R/1 | R/3 |
| 20 | C-APRN-IDEN | C-APRNIDM- | Annotation | 0 | 0.35 | Y/2 | Y/4 |
| 21 | C-APRN-MOOR | C-APRNMOM- | Mooring points | 0 | 0.35 | Y/2 | Y/4 |
| 22 | C-APRN-MRKG | C-APRNMRM- | Apron markings | 0 | 0.50 | C/4 | C/7 |
| 23 | C-APRN-SHLD | C-APRNSHM- | Shoulder stripes | 0 | 0.35 | Y/2 | Y/4 |
| 24 | C-APRN-SECU | C-APRNSEM- | Security zone markings | 0 | 0.25 | R/1 | R/3 |
| **Overrun Areas** | | | | | | | |
| 29 | C-OVRN-SHLD | C-OVRNSHM- | Shoulder markings | 0 | 0.50 | C/4 | C/7 |
| **Precision and Nonprecision Runways** | | | | | | | |
| 32 | C-RUNW-BLST | C-RUNWBLM- | Blast pad and stopway markings | 0 | 0.25 | R/1 | R/3 |
| 33 | C-RUNW-DIST | C-RUNWDIM- | Fixed distance markings | 0 | 0.25 | R/1 | R/3 |
| 34 | C-RUNW-DISP | C-RUNWDSM- | Displaced threshold markings | 0 | 0.25 | R/1 | R/3 |
| 35 | C-RUNW-CNTR | C-RUNWCNM- | Centerline markings | 0 | 0.25 | R/1 | R/3 |
| 36 | C-RUNW-IDEN | C-RUNWIDM- | Runway numbers and letters | 0 | 0.35 | Y/2 | Y/4 |
| 37 | C-RUNW-SHLD | C-RUNWSHM- | Shoulder markings | 0 | 0.35 | M/6 | M/5 |
| 38 | C-RUNW-SIDE | C-RUNWSIM- | Side stripes | 0 | 0.50 | C/4 | C/7 |
| 39 | C-RUNW-TDZM | C-RUNWTDM- | Touchdown zone markers | 0 | 0.35 | M/6 | M/5 |
| 40 | C-RUNW-THRS | C-RUNWTHM- | Threshold markers | 0 | 0.35 | M/6 | M/5 |
| **Heliports** | | | | | | | |
| 41 | C-HELI-BLST | C-HELIBLM- | Blast pad and stopway markings | 0 | 0.25 | R/1 | R/3 |
| 42 | C-HELI-DIST | C-HELIDIM- | Fixed distance markings | 0 | 0.25 | R/1 | R/3 |
| 43 | C-HELI-DISP | C-HELIDSM- | Displaced threshold markings | 0 | 0.25 | R/1 | R/3 |
| 44 | C-HELI-CNTR | C-HELICNM- | Centerline markings | 0 | 0.25 | R/1 | R/3 |
| 45 | C-HELI-IDEN | C-HELIIDM- | Heliport numbers and letters | 0 | 0.35 | Y/2 | Y/4 |
| 46 | C-HELI-SHLD | C-HELISHM- | Shoulder markings | 0 | 0.35 | M/6 | M/5 |
| 47 | C-HELI-SIDE | C-HELISIM- | Side stripes | 0 | 0.50 | C/4 | C/7 |
| 48 | C-HELI-TDZM | C-HELITDM- | Touchdown zone markers | 0 | 0.35 | M/6 | M/5 |
| 49 | C-HELI-THRS | C-HELITHM- | Threshold markers | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Civil

### Model File Type: Domestic Water Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-‒‒DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-‒‒‒KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-‒‒NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-‒‒‒PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C-‒‒‒NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C-‒‒SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-‒‒‒TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-‒‒RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-DOMW-DEVC | C-DOMWDEM- | Connectors, faucets, reducers, regulators, vents, intake points, tanks, taps, backflow preventers, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | C-DOMW-HYDR | C-DOMWHYM- | Hydrants | 0 | 0.25 | R/1 | R/3 |
| 13 | C-DOMW-METR | C-DOMWMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| 14 | C-DOMW-NHYD | C-DOMWNHM- | Non-potable hydrants/flushing hydrants | 0 | 0.25 | R/1 | R/3 |
| **Stations** | | | | | | | |
| 16 | C-DOMW-PUMP | C-DOMWPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 17 | C-DOMW-REDC | C-DOMWREM- | Pressure reducing stations | 0 | 0.35 | M/6 | M/5 |
| 18 | C-DOMW-STNS-IDEN | C-DOMWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | C-DOMW-RSVR-IDEN | C-DOMWRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 20 | C-DOMW-RSVR | C-DOMWRSM- | Reservoirs | 0 | 0.25 | R/1 | R/3 |
| 21 | C-DOMW-TANK | C-DOMWTAM- | Water storage tanks | 0 | 0.25 | R/1 | R/3 |
| 22 | C-DOMW-WELL | C-DOMWWEM- | Water well houses | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 26 | C-DOMW-PITS-IDEN | C-DOMWPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | C-DOMW-VENT | C-DOMWVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | C-DOMW-VLVE | C-DOMWVLM- | Valve pits/vaults | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | C-DOMW-ABND | C-DOMWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 37 | C-DOMW-FTTG | C-DOMWFTM- | Caps, cleanouts, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | C-DOMW-IDEN | C-DOMWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-DOMW-MAIN | C-DOMWMAM- | Main domestic water piping | WATERL | 0.35 | M/6 | M/5 |
| 44 | C-DOMW-NPOT | C-DOMWNPM- | Non-potable water piping | NONPOT | 0.35 | M/6 | M/5 |
| 45 | C-DOMW-FIRE | C-DOMWFIM- | Fire lines | FIRE | 0.25 | R/1 | R/3 |
| 46 | C-DOMW-SERV | C-DOMWSEM- | Domestic water service piping | 0 | 0.35 | M/6 | M/5 |
| 47 | C-DOMW-SIGN | C-DOMWSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-‒‒‒‒M-D-‒‒1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-‒‒‒‒M-D-‒‒2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-‒‒‒‒M-D-‒‒3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

Appendix A Model File Level/Layer Assignment Tables

**Discipline: Civil**

**Model File Type: Sanitary Sewer Plan**

| Level # | Level/Layer Naming — AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-SSWR-DEVC | C-SSWRDEM- | Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | C-SSWR-DEVC-IDEN | C-SSWRDIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 15 | C-SSWR-PLNT | C-SSWRPLM- | Treatment plants | 0 | 0.35 | M/6 | M/5 |
| 16 | C-SSWR-PUMP | C-SSWRPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | C-SSWR-STNS-IDEN | C-SSWRSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | C-SSWR-RSVR-IDEN | C-SSWRRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 20 | C-SSWR-LAGN | C-SSWRLAM- | Lagoons | 0 | 0.25 | G/3 | G/2 |
| 21 | C-SSWR-TANK | C-SSWRTAM- | Septic tanks | 0 | 0.25 | G/3 | G/2 |
| **Junction Boxes** | | | | | | | |
| 22 | C-SSWR-JBOX | C-SSWRJBM- | Junction boxes and manholes | 0 | 0.25 | R/1 | R/3 |
| 23 | C-SSWR-JBOX-IDEN | C-SSWRJIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| **Filtration/Drainage Areas** | | | | | | | |
| 26 | C-SSWR-FILT | C-SSWRFIM- | Filtration beds | 0 | 0.25 | G/3 | G/2 |
| 27 | C-SSWR-FILT-IDEN | C-SSWRFDM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 28 | C-SSWR-NITF | C-SSWRNIM- | Nitrification drain fields | 0 | 0.25 | G/3 | G/2 |
| 29 | C-SSWR-LEAC | C-SSWRLEM- | Leach field | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | C-SSWR-ABND | C-SSWRABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | C-SSWR-FLOW | C-SSWRFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | C-SSWR-FTTG | C-SSWRFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | C-SSWR-IDEN | C-SSWRIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-SSWR-MAIN | C-SSWRMAM- | Sanitary sewer piping | SSWAF | 0.35 | M/6 | M/5 |
| 46 | C-SSWR-SERV | C-SSWRSEM- | Sanitary sewer service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | C-SSWR-SIGN | C-SSWRSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Storm Sewer Plan**

| Level # | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-STRM-DEVC | C-STRMDEM- | Downspouts, flumes, oil/water separators, and flap gates | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 16 | C-STRM-PUMP | C-STRMPUM- | Pump stations | 0 | 0.35 | M/6 | M/5 |
| 17 | C-STRM-FMON | C-STRMFMM- | Flow monitoring station | 0 | 0.35 | M/6 | M/5 |
| 18 | C-STRM-STNS-IDEN | C-STRMSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs/Watersheds** | | | | | | | |
| 19 | C-STRM-RSVR-IDEN | C-STRMRIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 20 | C-STRM-LAGN | C-STRMLAM- | Lagoons, ponds, watersheds, and basins | 0 | 0.25 | G/3 | G/2 |
| 21 | C-STRM-AFFF | C-STRMAFM- | AFFF lagoon/detention pond | 0 | 0.25 | G/3 | G/2 |
| **Drainage Structures** | | | | | | | |
| 22 | C-STRM-MHOL | C-STRMMHM- | Manholes | 0 | 0.25 | R/1 | R/3 |
| 26 | C-STRM-DRAN-IDEN | C-STRMDRM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | G/3 | G/2 |
| 27 | C-STRM-EROS | C-STRMERM- | Erosion control (riprap) | 0 | 0.18 | B/5 | B/1 |
| 28 | C-STRM-CHUT | C-STRMCHM- | Chutes and concrete erosion control structures | 0 | 0.25 | R/1 | R/3 |
| 29 | C-STRM-HDWL | C-STRMHDM- | Headwalls and endwalls | 0 | 0.70 | W/7 | W/0 |
| 30 | C-STRM-INLT | C-STRMINM- | Inlets (curb, surface, and catch basins) | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | C-STRM-ABND | C-STRMABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | C-STRM-FLOW | C-STRMFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | C-STRM-FITG | C-STRMFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | C-STRM-IDEN | C-STRMIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 42 | C-STRM-CULV | C-STRMCLM- | Culverts | CULVRT | 0.25 | G/3 | G/2 |
| 43 | C-STRM-MAIN | C-STRMMAM- | Storm sewer piping | STRAF | 0.35 | M/6 | M/5 |
| 44 | C-STRM-SUBS | C-STRMSUM- | Subsurface drain piping | 0 | 0.25 | G/3 | G/2 |
| 45 | C-STRM-ROOF | C-STRMROM- | Roof drain line | 0 | 0.25 | G/3 | G/2 |
| 46 | C-STRM-SERV | C-STRMSEM- | Storm sewer service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | C-STRM-SIGN | C-STRMSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Civil

### Model File Type: Industrial Waste Water Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-INDW-DEVC | C-INDWDEM- | Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 15 | C-INDW-PLNT | C-INDWPLM- | Treatment plants | 0 | 0.35 | M/6 | M/5 |
| 16 | C-INDW-LIFT | C-INDWLIM- | Lift stations | 0 | 0.35 | M/6 | M/5 |
| 18 | C-INDW-STNS-IDEN | C-INDWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 19 | C-INDW-RSVR-IDEN | C-INDWRIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| 20 | C-INDW-LAGN | C-INDWLAM- | Lagoons | 0 | 0.35 | M/6 | M/5 |
| **Junction Boxes** | | | | | | | |
| 22 | C-INDW-JBOX | C-INDWJBM- | Junction boxes and manholes | 0 | 0.25 | R/1 | R/3 |
| **Piping** | | | | | | | |
| 32 | C-INDW-ABND | C-INDWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | C-INDW-FLOW | C-INDWFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 37 | C-INDW-FTTG | C-INDWFTM- | Caps and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 40 | C-INDW-IDEN | C-INDWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-INDW-MAIN | C-INDWMAM- | Main industrial waste water piping | IWASTE | 0.35 | M/6 | M/5 |
| 46 | C-INDW-SERV | C-INDWSEM- | Industrial waste water service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | C-INDW-SIGN | C-INDWSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Civil

### Model File Type: Natural Gas Utilities Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-NGAS-DEVC | C-NGASDEM- | Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves | 0 | 0.35 | M/6 | M/5 |
| 12 | C-NGAS-DEVC-IDEN | C-NGASDIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | M/6 | M/5 |
| 13 | C-NGAS-METR | C-NGASMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| **Stations** | | | | | | | |
| 16 | C-NGAS-PUMP | C-NGASPUM- | Compressor stations | 0 | 0.35 | M/6 | M/5 |
| 17 | C-NGAS-REDC | C-NGASREM- | Reducing stations | 0 | 0.35 | M/6 | M/5 |
| 18 | C-NGAS-STNS-IDEN | C-NGASSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Pits** | | | | | | | |
| 26 | C-NGAS-PITS-IDEN | C-NGASPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | C-NGAS-VENT | C-NGASVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | C-NGAS-VLVE | C-NGASVLM- | Valve pits/boxes | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | C-NGAS-ABND | C-NGASABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | C-NGAS-FLOW | C-NGASFLM- | Flow direction arrows | 0 | 0.25 | M/6 | M/5 |
| 37 | C-NGAS-FTTG | C-NGASFTM- | Caps, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | C-NGAS-IDEN | C-NGASIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-NGAS-MAIN | C-NGASMAM- | Main natural gas piping | NTGASN | 0.35 | M/6 | M/5 |
| 46 | C-NGAS-SERV | C-NGASSEM- | Service piping | 0 | 0.25 | R/1 | R/3 |
| 47 | C-NGAS-SIGN | C-NGASSIM- | Surface markers/signs | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Liquid Fuel Utilities Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Devices** | | | | | | | |
| 11 | C-FUEL-DEVC | C-FUELDEM- | Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves | 0 | 0.35 | M/6 | M/5 |
| 13 | C-FUEL-METR | C-FUELMEM- | Meters | 0 | 0.25 | G/3 | G/2 |
| **Stations** | | | | | | | |
| 16 | C-FUEL-PUMP | C-FUELPUM- | Booster pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | C-FUEL-STNS-IDEN | C-FUELSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Reservoirs** | | | | | | | |
| 21 | C-FUEL-TANK | C-FUELTAM- | Fuel tanks | 0 | 0.25 | G/3 | G/2 |
| **Junction Boxes** | | | | | | | |
| 22 | C-FUEL-JBOX | C-FUELJBM- | Junction boxes, manholes, handholes, test boxes | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 25 | C-FUEL-HYDR | C-FUELHYM- | Hydrant control pits | 0 | 0.25 | G/3 | G/2 |
| 26 | C-FUEL-PITS-IDEN | C-FUELPIM- | Identifier tags, symbol modifier, and text | 0 | 0.25 | R/1 | R/3 |
| 27 | C-FUEL-VENT | C-FUELVEM- | Vent pits | 0 | 0.25 | G/3 | G/2 |
| 28 | C-FUEL-VLVE | C-FUELVLM- | Valve pits | 0 | 0.25 | G/3 | G/2 |
| 29 | C-FUEL-TRCH | C-FUELTRM- | Fuel line trench | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | C-FUEL-ABND | C-FUELABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | C-FUEL-FLOW | C-FUELFLM- | Flow direction arrows | 0 | 0.35 | M/6 | M/5 |
| 36 | C-FUEL-DEFL | C-FUELDEM- | Defueling piping | 0 | 0.35 | M/6 | M/5 |
| 37 | C-FUEL-FTTG | C-FUELFTM- | Caps, crosses, and tees | 0 | 0.35 | M/6 | M/5 |
| 40 | C-FUEL-IDEN | C-FUELIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | C-FUEL-MAIN | C-FUELMAM- | Main fuel piping | LIQPET | 0.35 | M/6 | M/5 |
| 46 | C-FUEL-SERV | C-FUELSEM- | Service piping | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Profiles**

| Level # | Level/Layer Naming | | | Graphics | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Alignments** | | | | | | | |
| 8 | C-ALGN-DATA | C-ALGNDAM- | Alignment coordinates and curve data | 0 | 0.25 | G/3 | G/2 |
| 9 | C-ALGN-LINE | C-ALGNLIM- | Alignments | 4 | 0.35 | Y/2 | Y/4 |
| 10 | C-ALGN-STAT | C-ALGNSTM- | Alignment stationing and tick marks | 0 | 0.25 | G/3 | G/2 |
| **Crossing Elements - Use symbology from previous model files** | | | | | | | |
| **Grade Linework** | | | | | | | |
| 41 | C-GRAD-FNSH | C-GRADFNM- | Finished grade | 0 | 0.50 | C/4 | C/7 |
| 44 | C-GRAD-EXST | C-GRADEXM- | Existing grade, ground line | 3 | 0.35 | M/6 | M/5 |
| **Grid Lines** | | | | | | | |
| 48 | C-GRID-MAJR | C-GRIDMAM- | Major grid lines | 0 | 0.25 | R/1 | R/3 |
| 49 | C-GRID-MINR | C-GRIDMIM- | Minor grid lines | 1 | 0.18 | Gr/8 | Gr/9 |
| 50 | C-GRID-FRAM | C-GRIDFRM- | Frame | 0 | 0.50 | C/4 | C/7 |
| 51 | C-GRID-TEXT | C-GRIDTEM- | Border text, annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note:  V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: Elevations**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C---KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Elevations** | | | | | | | |
| 38 | C-ELEV-FIXT | C-ELEVFIM- | Miscellaneous fixtures | 0 | 0.35 | Y/2 | Y/4 |
| 40 | C-ELEV-IDEN | C-ELEVIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 41 | C-ELEV-OTLN | C-ELEVOTM- | Building outlines | 0 | 0.35 | M/6 | M/5 |
| 42 | C-ELEV-PATT | C-ELEVPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 44 | C-ELEV-SIGN | C-ELEVSIM- | Signage | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

**Model File Type: X-Sections**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | C-ANNO-REFR | C----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Crossing Elements - Use symbology from previous model files** | | | | | | | |
| **Sections** | | | | | | | |
| 35 | C-SECT-IDEN | C-SECTIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 36 | C-SECT-MBND | C-SECTMBM- | Material beyond section cut | 0 | 0.18 | B/5 | B/1 |
| 37 | C-SECT-MCUT | C-SECTMCM- | Material cut by section | 0 | 0.50 | C/4 | C/7 |
| 38 | C-SECT-PATT | C-SECTPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| **Grade Linework** | | | | | | | |
| 41 | C-GRAD-FNSH | C-GRADFNM- | Finished grade | 0 | 0.50 | C/4 | C/7 |
| 44 | C-GRAD-EXST | C-GRADEXM- | Existing grade, ground line | 3 | 0.35 | M/6 | M/5 |
| **Grid Lines** | | | | | | | |
| 48 | C-GRID-MAJR | C-GRIDMAM- | Major grid lines | 0 | 0.25 | R/1 | R/3 |
| 49 | C-GRID-MINR | C-GRIDMIM- | Minor grid lines | 1 | 0.18 | Gr/8 | Gr/9 |
| 50 | C-GRID-FRAM | C-GRIDFRM- | Frame | 0 | 0.50 | C/4 | C/7 |
| 51 | C-GRID-TEXT | C-GRIDTEM- | Border text, annotation | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Civil
### Model File Type: Details

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C——DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C——KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-NPLT | C——NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | C-ANNO-PATT | C——PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C——NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C——SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C——TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | C-DETL-GRPH | C-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | C-DETL-METR | C-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.25 | G/3 | G/2 |
| 13 | C-DETL-INPD | C-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Demolition** | | | | | | | |
| 56 | C-STAT-DEMO-PHS1 | C———M-D—1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | C-STAT-DEMO-PHS2 | C———M-D—2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | C-STAT-DEMO-PHS3 | C———M-D—3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Landscape

### Model File Type: Landscape Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | L-ANNO-DIMS | L-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | L-ANNO-KEYN | L----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | L-ANNO-NPLT | L----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | L-ANNO-PATT | L----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | L-ANNO-NOTE | L-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | L-ANNO-SYMB | L-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | L-ANNO-TEXT | L----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | L-ANNO-REFR | L----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Site Improvements** | | | | | | | |
| 11 | L-SITE-BRDG | L-SITEBRM- | Bridges | 0 | 0.35 | 22 | 22 |
| 12 | L-SITE-DECK | L-SITEDEM- | Decks | 0 | 0.35 | 232 | 107 |
| 13 | L-SITE-FENC | L-SITEFEM- | Fencing | 0 | 0.35 | Y/2 | Y/4 |
| 14 | L-SITE-FURN | L-SITEFUM- | Furnishings | 0 | 0.50 | C/4 | C/7 |
| 15 | L-SITE-IDEN | L-SITEIDM- | Annotation | 0 | 0.35 | M/6 | M/5 |
| 16 | L-SITE-PLAY | L-SITEPLM- | Play structures | 0 | 0.35 | Y/2 | Y/4 |
| 17 | L-SITE-POOL | L-SITEPOM- | Pools and spas | 0 | 0.35 | 162 | 33 |
| 18 | L-SITE-ROCK | L-SITEROM- | Boulders and cobble | 0 | 0.25 | R/1 | R/3 |
| 19 | L-SITE-SPRT | L-SITESPM- | Sports fields | 0 | 0.35 | Y/2 | Y/4 |
| 20 | L-SITE-WALK | L-SITEWAM- | Walks and steps | 0 | V | V | V |
| 21 | L-SITE-RTWL | L-SITERTM- | Retaining walls | 0 | 0.50 | C/4 | C/7 |
| **Landscape Plants** | | | | | | | |
| 23 | L-PLNT-BEDS | L-PLNTBEM- | Planting beds | 0 | 0.35 | M/6 | M/5 |
| 24 | L-PLNT-TURF | L-PLNTTUM- | Lawn areas (turfing limits) | 0 | 0.50 | 23 | 46 |
| 25 | L-PLNT-MLCH | L-PLNTMLM- | Mulches - organic and inorganic | 0 | 0.25 | G/3 | G/2 |
| 26 | L-PLNT-GRND | L-PLNTGRM- | Groundcover and vines | 0 | 0.35 | 82 | 18 |
| 27 | L-PLNT-IDEN | L-PLNTIDM- | Annotation | 0 | 0.35 | M/6 | M/5 |
| 28 | L-PLNT-PLTS | L-PLNTPLM- | Planting plants (e.g., ornamental annuals and perennials) | 0 | 0.50 | 83 | 42 |
| 29 | L-PLNT-BUSH-LINE | L-PLNTBLM- | Bush and shrub line | 0 | 0.50 | 83 | 42 |
| 30 | L-PLNT-BUSH | L-PLNTBUM- | Bushes and shrubs (e.g., evergreen, deciduous) | 0 | 0.50 | 83 | 42 |
| 31 | L-PLNT-TREE-LINE | L-PLNTTLM- | Tree line | TREEL | 0.50 | 83 | 42 |
| 32 | L-PLNT-TREE | L-PLNTTRM- | Trees (e.g., evergreen, deciduous, etc.) | 0 | 0.50 | 83 | 42 |
| 33 | L-PLNT-SPRG | L-PLNTSPM- | Sprigs | 0 | 0.25 | G/3 | G/2 |
| 34 | L-PLNT-CTNR | L-PLNTCTM- | Containers or planters | 0 | 0.25 | R/1 | R/3 |
| 35 | L-PLNT-SHAD | L-PLNTSHM- | Shadow areas | 0 | 0.18 | B/5 | B/1 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | L-STAT-DEMO-PHS1 | L-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | L-STAT-DEMO-PHS2 | L-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | L-STAT-DEMO-PHS3 | L-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note: V = Varies, NA = Not Applicable**

Appendix A Model File Level/Layer Assignment Tables

**Discipline: Landscape**

Model File Type: Irrigation Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | L-ANNO-DIMS | L----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | L-ANNO-KEYN | L----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | L-ANNO-NPLT | L----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | L-ANNO-PATT | L----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | L-ANNO-NOTE | L----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | L-ANNO-SYMB | L----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | L-ANNO-TEXT | L----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | L-ANNO-REFR | L----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Irrigation System** | | | | | | | |
| 25 | L-IRRG-COVR | L-IRRGCOM- | Irrigation coverage, spray distribution patterns | 0 | 0.18 | B/5 | B/1 |
| 26 | L-IRRG-EQPM | L-IRRGEQM- | Equipment (e.g., controllers, valves, RPBPs, etc.) | 0 | 0.35 | M/6 | M/5 |
| 27 | L-IRRG-IDEN | L-IRRGIDM- | Annotation | 0 | 0.35 | Y/2 | Y/4 |
| 28 | L-IRRG-PIPE | L-IRRGPIM- | Piping | LAWNSP | 0.35 | M/6 | M/5 |
| 31 | L-IRRG-SPKL | L-IRRGSPM- | Sprinklers | 0 | 0.35 | M/6 | M/5 |
| 34 | L-IRRG-HEAD | L-IRRGHEM- | Irrigation heads, bubblers, and drip irrigation emitters | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | L-STAT-DEMO-PHS1 | L----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | L-STAT-DEMO-PHS2 | L----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | L-STAT-DEMO-PHS3 | L----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Landscape

### Model File Type: Details

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | L-ANNO-DIMS | L—–DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | L-ANNO-KEYN | L—–KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | L-ANNO-NPLT | L—-NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | L-ANNO-PATT | L—-PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | L-ANNO-NOTE | L—-NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | L-ANNO-SYMB | L—–SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | L-ANNO-TEXT | L—–TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | L-DETL-GRPH | L-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | L-DETL-METR | L-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.25 | G/3 | G/2 |
| 13 | L-DETL-INPD | L-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Demolition** | | | | | | | |
| 56 | L-STAT-DEMO-PHS1 | L——–M-D—-1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | L-STAT-DEMO-PHS2 | L——–M-D—-2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | L-STAT-DEMO-PHS3 | L——–M-D—-3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Model File Type: Foundation Plan

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S----SYP- | Miscellaneous symbols | V | 0.35 | M/2 | M/5 |
| 7 | S-ANNO-TEXT | S----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Foundation** | | | | | | | |
| 11 | S-FNDN-CNTR | S-FNDNCNM- | Beam centerlines | 7 | 0.18 | B/5 | B/1 |
| 16 | S-FNDN-FTNG | S-FNDNFTM- | Footings | 0, 2 | 0.50 | C/4 | C/7 |
| 17 | S-FNDN-GRBM | S-FNDNGRM- | Grade beams | 0, 2 | 0.50 | C/4 | C/7 |
| 18 | S-FNDN-PEDS | S-FNDNPEM- | Column pedestals | 0, 2 | 0.50 | C/4 | C/7 |
| 19 | S-FNDN-PILE | S-FNDNPIM- | Piles (steel sheet, concrete, wood), piers, caisson piers, drilled piers | 0, 2 | 0.35 | Y/2 | Y/4 |
| 20 | S-FNDN-RBAR | S-FNDNRBM- | Foundation reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Slabs** | | | | | | | |
| 21 | S-SLAB-OPEN | S-SLABOPM- | Openings and penetrations | 0, 2 | 0.25 | R/1 | R/3 |
| 26 | S-SLAB-EDGE | S-SLABEDM- | Edge of slab | 0, 2 | 0.35 | Y/2 | Y/4 |
| 28 | S-SLAB-RBAR | S-SLABRBM- | Slab reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Grating** | | | | | | | |
| 30 | S-GRAT-ELEV | S-GRATELM- | Elevated grating (catwalks) | 0, 2 | 0.25 | G/3 | G/2 |
| 31 | S-GRAT-FLOR | S-GRATFLM- | Floor grating | 0, 2 | 0.25 | G/3 | G/2 |
| **Joints** | | | | | | | |
| 33 | S-JOIN-CNST | S-JOINCNM- | Construction joints | 0 | 0.25 | G/3 | G/2 |
| 34 | S-JOIN-CTRL | S-JOINCTM- | Control/expansion joints | 0 | 0.25 | R/1 | R/3 |
| **Miscellaneous Supports** | | | | | | | |
| 35 | S-SPPT-MISC | S-SPPTMIM- | Miscellaneous fasteners, anchor bolts, supports | 0, 2 | 0.25 | G/3 | G/2 |
| 36 | S-SPPT-SHPS | S-SPPTSHM- | Miscellaneous shapes, plates | 0, 2 | 0.25 | G/3 | G/2 |
| **Stairs and Elevators** | | | | | | | |
| 38 | S-STRS-FRAM | S-STRSFRM- | Stair/elevator framing | 0, 2 | 0.35 | M/6 | M/5 |
| 39 | S-STRS-LADD | S-STRSLAM- | Ladders, ladder handrails, safety guard, grab bars | 0, 2 | 0.25 | G/3 | G/2 |
| 40 | S-STRS-RBAR | S-STRSRBM- | Stair reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Walls** | | | | | | | |
| 43 | S-WALL-CONC | S-WALLCOM- | Concrete walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 44 | S-WALL-LOAD | S-WALLLOM- | Load bearing CMU walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 45 | S-WALL-NONL | S-WALLNOM- | Non-load bearing CMU walls | 0, 2 | 0.35 | M/6 | M/5 |
| 46 | S-WALL-PCST | S-WALLPCM- | Precast walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 47 | S-WALL-STUD | S-WALLSTM- | Stud walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 48 | S-WALL-RBAR | S-WALLRBM- | Wall reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Pads** | | | | | | | |
| 49 | S-PADS-EQPM | S-PADSEQM- | Equipment pads | 0, 2 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S----M-D--1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S----M-D--2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S----M-D--3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Structural

### Model File Type: Framing Plan

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S-----DIP- | Witness/extension lines, dimension terminators, dimension text, welding symbols | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Beams** | | | | | | | |
| 11 | S-BEAM-CNTR | S-BEAMCNM- | Beam centerlines | 7 | 0.18 | B/5 | B/1 |
| 12 | S-BEAM-PRIM | S-BEAMPRM- | Primary beams, girders | 0, 2 | 0.50 | C/4 | C/7 |
| 13 | S-BEAM-SECD | S-BEAMSCM- | Secondary beams, girders | 0, 2 | 0.35 | M/6 | M/5 |
| **Bracing** | | | | | | | |
| 16 | S-BRAC-LATL | S-BRACLAM- | Lateral bracing | 0, 2 | 0.35 | Y/2 | Y/4 |
| 17 | S-BRAC-SHEA | S-BRACSHM- | Shear walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 18 | S-BRAC-VERT | S-BRACVEM- | Vertical bracing | 0, 2 | 0.35 | Y/2 | Y/4 |
| **Deck** | | | | | | | |
| 19 | S-DECK-FLOR | S-DECKFLM- | Floor deck | 0, 2 | 0.25 | G/3 | G/2 |
| 20 | S-DECK-RBAR | S-DECKRBM- | Deck/slab reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| 21 | S-DECK-OPEN | S-DECKOPM- | Openings and penetrations | 0, 2 | 0.25 | R/1 | R/3 |
| 22 | S-DECK-ROOF | S-DECKROM- | Roof deck | 0 | 0.25 | G/3 | G/2 |
| **Open Web Joists** | | | | | | | |
| 23 | S-JOIS-PRIM | S-JOISPRM- | Primary joists | 0, 2 | 0.50 | C/4 | C/7 |
| 24 | S-JOIS-SECD | S-JOISSCM- | Secondary joists | 0, 2 | 0.35 | M/6 | M/5 |
| 25 | S-JOIS-BRDG | S-JOISBRM- | Bridging | 2 | 0.25 | R/1 | R/3 |
| **Miscellaneous Metal** | | | | | | | |
| 29 | S-METL-MISC | S-METLMIM- | Miscellaneous metal | 0, 2 | 0.35 | M/6 | M/5 |
| **Joints** | | | | | | | |
| 33 | S-JOIN-CNST | S-JOINCNM- | Construction joints | 0 | 0.25 | G/3 | G/2 |
| 34 | S-JOIN-CTRL | S-JOINCTM- | Control/expansion joints | 0 | 0.25 | R/1 | R/3 |
| **Miscellaneous Supports** | | | | | | | |
| 35 | S-SPPT-MISC | S-SPPTMIM- | Miscellaneous fasteners, anchor bolts, supports | 0, 2 | 0.25 | G/3 | G/2 |
| 36 | S-SPPT-SHPS | S-SPPTSHM- | Miscellaneous shapes, plates | 0, 2 | 0.25 | G/3 | G/2 |
| **Stairs and Elevators** | | | | | | | |
| 38 | S-STRS-FRAM | S-STRSFRM- | Stair/elevator framing | 0, 2 | 0.35 | M/6 | M/5 |
| 39 | S-STRS-LADD | S-STRSLAM- | Ladders, ladder handrails, safety guard, grab bars | 0, 2 | 0.25 | G/3 | G/2 |
| 40 | S-STRS-RBAR | S-STRSRBM- | Stair reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Trusses** | | | | | | | |
| 41 | S-TRUS-PRIM | S-TRUSPRM- | Primary trusses | 0, 2 | 0.50 | C/4 | C/7 |
| 42 | S-TRUS-SECD | S-TRUSSCM- | Secondary trusses | 0, 2 | 0.35 | M/6 | M/5 |
| **Walls** | | | | | | | |
| 43 | S-WALL-CONC | S-WALLCOM- | Concrete walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 44 | S-WALL-LOAD | S-WALLLOM- | Load bearing CMU walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 45 | S-WALL-NONL | S-WALLNOM- | Non-load bearing CMU walls | 0, 2 | 0.35 | M/6 | M/5 |
| 46 | S-WALL-PCST | S-WALLPCM- | Precast walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 47 | S-WALL-STUD | S-WALLSTM- | Stud walls | 0, 2 | 0.35 | Y/2 | Y/4 |
| 48 | S-WALL-RBAR | S-WALLRBM- | Wall reinforcing | 0, 2 | 0.70 | W/7 | W/0 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

# Discipline: Structural

## Model File Type: Column Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Grid Lines** | | | | | | | |
| 8 | S-GRID-IDEN | S-GRIDIDM- | Column I.D. tags | 0 | 0.25 | R/1 | R/3 |
| 9 | S-GRID-HORZ | S-GRIDHOM- | Primary grid lines (horizontal) | 7 | 0.18 | B/5 | B/1 |
| 10 | S-GRID-VERT | S-GRIDVEM- | Primary grid lines (vertical) | 7 | 0.18 | B/5 | B/1 |
| 11 | S-GRID-MSC1 | S-GRIDM1M- | Miscellaneous grid lines (Type 1) | 0 | 0.18 | Gr/8 | Gr/9 |
| 12 | S-GRID-MSC2 | S-GRIDM2M- | Miscellaneous grid lines (Type 2) | 0 | 0.18 | Gr/8 | Gr/9 |
| 13 | S-GRID-MSC3 | S-GRIDM3M- | Miscellaneous grid lines (Type 3) | 0 | 0.18 | Gr/8 | Gr/9 |
| 14 | S-GRID-MSC4 | S-GRIDM4M- | Miscellaneous grid lines (Type 4) | 0 | 0.18 | Gr/8 | Gr/9 |
| **Columns** | | | | | | | |
| 16 | S-COLS-CNTR | S-COLSCNM- | Column centerlines/working lines | 7 | 0.18 | 10 | 10 |
| 17 | S-COLS-PRIM | S-COLSPRM- | Primary columns | 0 | 0.35 | M/6 | M/5 |
| 18 | S-COLS-SCND | S-COLSSCM- | Secondary columns | 0 | 0.35 | Y/2 | Y/4 |
| 19 | S-COLS-MSC1 | S-COLSM1M- | Miscellaneous columns (Type 1) | 0 | 0.35 | 22 | 22 |
| 20 | S-COLS-MSC2 | S-COLSM2M- | Miscellaneous columns (Type 2) | 0 | 0.35 | 22 | 22 |
| 21 | S-COLS-MSC3 | S-COLSM3M- | Miscellaneous columns (Type 3) | 0 | 0.35 | 22 | 22 |
| 22 | S-COLS-MSC4 | S-COLSM4M- | Miscellaneous columns (Type 4) | 0 | 0.35 | 22 | 22 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Structural

### Model File Type: Non-Building Structures

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S-----DIP- | Witness/extension lines, dimension terminators, dimension text, welding symbols | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Features** | | | | | | | |
| 9 | S-FEAT-GENL | S-FEATGEM- | General features (miscellaneous items) | 0, 2 | 0.35 | M/6 | M/5 |
| 10 | S-FEAT-CMUW | S-FEATCMM- | CMU outline (no patterning) | 0, 2 | 0.35 | Y/2 | Y/4 |
| 11 | S-FEAT-CNTR | S-FEATCNM- | Feature centerlines | 7 | 0.18 | B/5 | B/1 |
| 15 | S-FEAT-CONC | S-FEATCOM- | Concrete outline (no patterning) | 0, 2 | 0.35 | M/6 | M/5 |
| 20 | S-FEAT-WOOD | S-FEATWOM- | Wood outline (no patterning) | 0, 2 | 0.35 | Y/2 | Y/4 |
| **Foundation** | | | | | | | |
| 19 | S-FNDN-PILE | S-FNDNPIM- | Piles (steel sheet, concrete, wood), piers, caisson piers, drilled piers | 0, 2 | 0.35 | Y/2 | Y/4 |
| **Openings** | | | | | | | |
| 21 | S-OPEN-MISC | S-OPENMIM- | Openings and penetrations | 0, 2 | 0.25 | R/1 | R/3 |
| **Piping** | | | | | | | |
| 25 | S-PIPE-MISC | S-PIPEMIM- | Miscellaneous piping/culverts | 0, 2 | 0.35 | Y/2 | Y/4 |
| 26 | S-PIPE-GATE | S-PIPEGAM- | Gates (flap gates, sluice gates, other) | 0, 2 | 0.25 | G/3 | G/2 |
| 27 | S-PIPE-TRSH | S-PIPETRM- | Trash racks | 0, 2 | 0.25 | G/3 | G/2 |
| **Grating** | | | | | | | |
| 30 | S-GRAT-ELEV | S-GRATELM- | Elevated grating (catwalks) | 0, 2 | 0.25 | G/3 | G/2 |
| 31 | S-GRAT-FLOR | S-GRATFLM- | Floor/surface grating, manhole covers/frames | 0, 2 | 0.25 | G/3 | G/2 |
| 32 | S-GRAT-SUBS | S-GRATSUM- | Subsurface grating | 0, 2 | 0.25 | G/3 | G/2 |
| **Joints** | | | | | | | |
| 33 | S-JOIN-CNST | S-JOINCNM- | Construction joints | 0 | 0.25 | G/3 | G/2 |
| 34 | S-JOIN-CTRL | S-JOINCTM- | Control/expansion joints, joint materials (e.g., felt), vapor barrier, waterstops, other | 0 | 0.25 | R/1 | R/3 |
| **Miscellaneous Supports** | | | | | | | |
| 35 | S-SPPT-MISC | S-SPPTMIM- | Miscellaneous fasteners, anchor bolts, supports | 0, 2 | 0.25 | G/3 | G/2 |
| 36 | S-SPPT-SHPS | S-SPPTSHM- | Miscellaneous shapes, plates | 0, 2 | 0.25 | G/3 | G/2 |
| **Stairs and Elevators** | | | | | | | |
| 38 | S-STRS-FRAM | S-STRSFRM- | Stair/elevator framing | 0, 2 | 0.35 | M/6 | M/5 |
| 39 | S-STRS-LADD | S-STRSLAM- | Ladders, ladder handrails, safety guard, grab bars | 0, 2 | 0.25 | G/3 | G/2 |
| **Reinforcing** | | | | | | | |
| 40 | S-REIN-RBAR | S-REINRBM- | Rebar, welded wire mesh | 0, 2 | 0.70 | W/7 | W/0 |
| **Safety Barriers** | | | | | | | |
| 42 | S-SAFE-HRAL | S-SAFEHRM- | Handrails | 0 | 0.25 | G/3 | G/2 |
| 43 | S-SAFE-FENC | S-SAFEFEM- | Fencing | 0 | 0.25 | G/3 | G/2 |
| **Grade Lines** | | | | | | | |
| 45 | S-GRDL-FNGR | S-GRDLFNM- | Finished grade | 0 | 0.35 | Y/2 | Y/4 |
| 46 | S-GRDL-EXGL | S-GRDLEXM- | Existing ground | 3 | 0.25 | G/3 | G/2 |
| 47 | S-GRDL-WATR | S-GRDLWAM- | Water surface | 0 | 0.25 | G/3 | G/2 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note: V = Varies, NA = Not Applicable**

# Discipline: Structural

## Model File Type: Elevations

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S---KEP- | Reference keynotes with associated leaders | 0 | 0.35 | Y/2 | Y/4 |
| 3 | S-ANNO-NPLT | S----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S---TEP- | Miscellaneous text and callouts with associated leaders | 0 | 0.35 | Y/2 | Y/4 |
| NA | S-ANNO-REFR | S---RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Beams** | | | | | | | |
| 11 | S-BEAM-CNTR | S-BEAMCNM- | Beam centerlines | 7 | 0.18 | B/5 | B/1 |
| 12 | S-BEAM-PRIM | S-BEAMPRM- | Primary beams/girders outlines | 0, 2 | 0.50 | C/4 | C/7 |
| 13 | S-BEAM-SECD | S-BEAMSCM- | Secondary beams/girders outlines | 0, 2 | 0.35 | M/6 | M/5 |
| **Joints** | | | | | | | |
| 33 | S-JOIN-CNST | S-JOINCNM- | Construction joints | 0 | 0.25 | G/3 | G/2 |
| 34 | S-JOIN-CTRL | S-JOINCTM- | Control/expansion joints | 0 | 0.25 | R/1 | R/3 |
| **Miscellaneous Supports** | | | | | | | |
| 35 | S-SPPT-MISC | S-SPPTMIM- | Miscellaneous fasteners, anchor bolts, supports | 0, 2 | 0.25 | G/3 | G/2 |
| 36 | S-SPPT-SHPS | S-SPPTSHM- | Miscellaneous shapes, plates | 0, 2 | 0.25 | G/3 | G/2 |
| **Walls** | | | | | | | |
| 43 | S-WALL-OTLN | S-WALLOTM- | Wall outline | 0, 2 | 0.35 | Y/2 | Y/4 |
| 45 | S-WALL-VBAR | S-WALLVBM- | Vertical/primary reinforcement | 0, 2 | 0.50 | C/4 | C/7 |
| 46 | S-WALL-HBAR | S-WALLHBM- | Horizontal/secondary reinforcement | 0, 2 | 0.50 | C/4 | C/7 |
| 49 | S-WALL-OPEN | S-WALLOPM- | Openings and penetrations | 0, 2 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Structural

### Model File Type: Sections

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S——DIP- | Witness/extension lines, dimension terminators, dimension text, welding symbols | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S——KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S——NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S——PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S——NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S——SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S——TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S——RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Section Information** | | | | | | | |
| 9 | S-SECT-GENF | S-SECTGEM- | General features (miscellaneous items) | 0, 2 | 0.35 | M/6 | M/5 |
| 10 | S-SECT-CMUW | S-SECTCMM- | CMU outline (no patterning) | 0, 2 | 0.35 | Y/2 | Y/4 |
| 11 | S-SECT-CNTR | S-SECTCNM- | Centerlines | 7 | 0.18 | B/5 | B/1 |
| 12 | S-SECT-PRIM | S-SECTPRM- | Primary beams/girders outlines | 0, 2 | 0.50 | C/4 | C/7 |
| 15 | S-SECT-CONC | S-SECTCOM- | Concrete outline (no patterning) | 0, 2 | 0.35 | M/6 | M/5 |
| 20 | S-SECT-WOOD | S-SECTWOM- | Wood outline (no patterning) | 0, 2 | 0.35 | Y/2 | Y/4 |
| 33 | S-SECT-JOIN | S-SECTJOM- | Joint materials (e.g., felt), vapor barrier, other | 0, 2 | 0.25 | R/1 | R/3 |
| 34 | S-SECT-STLS | S-SECTSTM- | Wide flange shapes, plates, open web joists, decking | 0, 2 | 0.25 | G/3 | G/2 |
| 35 | S-SECT-MISC | S-SECTMIM- | Miscellaneous fasteners, anchor bolts, supports | 0, 2 | 0.25 | G/3 | G/2 |
| 36 | S-SECT-SHPS | S-SECTSHM- | Miscellaneous shapes, plates | 0, 2 | 0.25 | G/3 | G/2 |
| 40 | S-SECT-RBAR | S-SECTRBM- | Rebar, welded wire mesh | 0, 2, WWFBRC | 0.70 | W/7 | W/0 |
| 45 | S-SECT-FNGR | S-SECTFNM- | Finished grade | 0 | 0.35 | Y/2 | Y/4 |

Note: V = Varies, NA = Not Applicable

# Discipline: Structural

## Model File Type: Details

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S-----DIP- | Witness/extension lines, dimension terminators, dimension text, welding symbols | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-NPLT | S-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | S-ANNO-PATT | S-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S---SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | S-ANNO-REFR | S----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Detail Information** | | | | | | | |
| 11 | S-DETL-GRPH | S-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | S-DETL-METR | S-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | S-DETL-INPD | S-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition** | | | | | | | |
| 56 | S-STAT-DEMO-PHS1 | S-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | S-STAT-DEMO-PHS2 | S-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | S-STAT-DEMO-PHS3 | S-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Architectural

### Model File Type: Floor Plan

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | A-FLOR-IDEN | A-FLORIDM- | Room name, space identification text | 0 | 0.25 | G/3 | G/2 |
| 9 | A-FLOR-NUMB | A-FLORNUM- | Room/space identification number and symbol | 0 | 0.25 | G/3 | G/2 |
| 13 | A-FLOR-LEVL | A-FLORLEM- | Level changes, shafts, ramps, pits, breaks in construction, and depressions | 0 | 0.35 | M/6 | M/5 |
| 15 | A-FLOR-OTLN | A-FLOROTM- | Floor outline/perimeter/building footprint | 0 | 0.35 | M/6 | M/5 |
| 16 | A-FLOR-PATT | A-FLORPAM- | Paving, tile, carpet patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 17 | A-FLOR-RAIS | A-FLORRAM- | Access (raised) flooring | 0 | 0.25 | G/3 | G/2 |
| 18 | A-FLOR-OTLN-RPRM | A-FLORORM- | Room perimeter shape (Interior walls) | 0 | 0.35 | Y/2 | Y/4 |
| 19 | A-FLOR-SIGN | A-FLORSIM- | Signage | 0 | 0.25 | R/1 | R/3 |
| 20 | A-FLOR-SPCL | A-FLORSPM- | Architectural specialties (e.g., toilet room accessories, display cases) | 0 | 0.25 | G/3 | G/2 |
| **Columns** | | | | | | | |
| 22 | A-COLS-ENCL | A-COLSENM- | Column enclosures/fire protection | 0 | 0.50 | C/4 | C/7 |
| **Walls** | | | | | | | |
| 23 | A-WALL-CAVI | A-WALLCAM- | Cavity wall lines | 0 | 0.25 | R/1 | R/3 |
| 24 | A-WALL-CNTR | A-WALLCNM- | Wall centerlines | 7 | 0.18 | B/5 | B/1 |
| 25 | A-WALL-CWMG | A-WALLCWM- | Curtain wall mullions and glass | 0 | 0.25 | R/1 | R/3 |
| 26 | A-WALL-FULL-EXTR | A-WALLFEM- | Exterior full height walls | 0 | 0.35 | Y/2 | Y/4 |
| 27 | A-WALL-FIRE | A-WALLFIM- | Fire wall designators (patterning) | 0 | 0.35 | Y/2 | Y/4 |
| 28 | A-WALL-IDEN | A-WALLIDM- | Wall identification/type text or tags | 0 | 0.25 | G/3 | G/2 |
| 29 | A-WALL-FULL-INTR | A-WALLFNM- | Interior full height walls | 0 | 0.25 | G/3 | G/2 |
| 30 | A-WALL-MOVE | A-WALLMOM- | Moveable walls/partitions | 0 | 0.18 | B/5 | B/1 |
| 31 | A-WALL-PATT | A-WALLPAM- | Wall insulation, hatching, and fill | 0 | 0.18 | Gr/8 | Gr/9 |
| 32 | A-WALL-PRHT | A-WALLPRM- | Partial height walls (do not appear on Reflected Ceiling Plan) | 0 | 0.25 | R/1 | R/3 |
| 33 | A-WALL-SPCL | A-WALLSPM- | Wall-hung/attached specialties (e.g., fixtures, grab bars (incl. handicap), telephone booths) | 0 | 0.25 | R/1 | R/3 |
| **Openings** | | | | | | | |
| 34 | A-GLAZ-SILL | A-GLAZSIM- | Window sills | 0 | 0.18 | B/5 | B/1 |
| 35 | A-WALL-HEAD | A-WALLHEM- | Door and window headers | 0 | 0.25 | R/1 | R/3 |
| 36 | A-WALL-JAMB | A-WALLJAM- | Door and window jambs | 0 | 0.25 | R/1 | R/3 |
| **Doors** | | | | | | | |
| 37 | A-DOOR-FULL | A-DOORFUM- | Full height (to ceiling) door: swing and leaf | 0 | 0.25 | G/3 | G/2 |
| 38 | A-DOOR-IDEN | A-DOORIDM- | Door number and symbol, hardware group, etc. | 0 | 0.25 | G/3 | G/2 |
| 39 | A-DOOR-PRHT | A-DOORPRM- | Partial height door: swing and leaf | 0 | 0.35 | M/6 | M/5 |
| 40 | A-DOOR-SYMB | A-DOORSYM- | Miscellaneous door symbols (e.g., overhead, bifold, pocket, etc.) | 0 | 0.25 | R/1 | R/3 |
| **Windows** | | | | | | | |
| 41 | A-GLAZ-FULL | A-GLAZFUM- | Full height glazed walls and partitions (see A-WALL-CWMG for curtain walls) | 0 | 0.25 | R/1 | R/3 |
| 42 | A-GLAZ-IDEN | A-GLAZIDM- | Window number and symbol | 0 | 0.25 | G/3 | G/2 |
| 43 | A-GLAZ-PRHT | A-GLAZPRM- | Windows and partial height glazed partitions | 0 | 0.25 | R/1 | R/3 |
| **Plumbing Fixtures** | | | | | | | |
| 44 | A-FLOR-FIXT | A-FLORFXM- | Plumbing fixtures | 0 | 0.25 | 201 | 29 |
| 45 | A-FLOR-TPTN | A-FLORTPM- | Toilet partitions | 0 | 0.25 | R/1 | R/3 |
| **Elevators** | | | | | | | |
| 46 | A-FLOR-EVTR | A-FLOREVM- | Elevator cars and equipment | 0 | 0.35 | Y/2 | Y/4 |
| **Stairs** | | | | | | | |
| 47 | A-FLOR-STRS | A-FLORSTM- | Stair risers/treads, escalators, ladders | 0 | 0.35 | Y/2 | Y/4 |
| **Railings** | | | | | | | |
| 48 | A-FLOR-HRAL | A-FLORHRM- | Stair and balcony handrails, guard rails | 0 | 0.25 | R/1 | R/3 |

Appendix A Model File Level/Layer Assignment Tables

**Discipline: Architectural**

**Model File Type: Floor Plan**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Woodwork** | | | | | | | |
| 49 | A-FLOR-CASE | A-FLORCAM- | Casework (manufactured cabinets) | 0 | 0.25 | G/3 | G/2 |
| 50 | A-FLOR-WDWK | A-FLORWDM- | Architectural woodwork (field built cabinets and counters) | 0 | 0.25 | G/3 | G/2 |
| **Ceiling Penetrations** | | | | | | | |
| 51 | A-FLOR-OVHD | A-FLOROVM- | Overhead items (skylights, overhangs etc.) | 2 | 0.18 | Gr/8 | Gr/9 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note: V = Varies, NA = Not Applicable**

**Discipline: Architectural**

**Model File Type: Reflected Ceiling Plan**

| Level # | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Ceiling Information** | | | | | | | |
| 10 | A-CLNG-ACCS | A-CLNGACM- | Access panels | 0 | 0.35 | M/6 | M/5 |
| 12 | A-CLNG-CTLJ | A-CLNGCJM- | Ceiling control joints | 0 | 0.35 | Y/2 | Y/4 |
| 13 | A-CLNG-GRID | A-CLNGGRM- | Ceiling grid | 0 | 0.25 | R/1 | R/3 |
| 14 | A-CLNG-OPEN | A-CLNGOPM- | Openings, ceiling/roof penetrations (see also A-FLOR-OVHD in Model File Type: Floor Plan) | 0 | 0.18 | Gr/8 | Gr/9 |
| 15 | A-CLNG-PATT | A-CLNGPAM- | Ceiling patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 16 | A-CLNG-TEES | A-CLNGTEM- | Main tees | 0 | 0.18 | B/5 | B/1 |
| 17 | A-CLNG-SUSP | A-CLNGSUM- | Suspended elements, ceiling mounted specialties (e.g., clocks, fans, etc.) | 0 | 0.18 | B/5 | B/1 |
| **Lights** | | | | | | | |
| 21 | A-LITE-CLNG | A-LITECLM- | Specialty ceiling lights not shown on Electrical Lighting Plan | 0 | 0.50 | C/4 | C/7 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Architectural**

**Model File Type: Roof Plan**

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching (see also A-ROOF-PATT) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Roof Information** | | | | | | | |
| 11 | A-ROOF-CRTS | A-ROOFCRM- | Crickets flow arrows flow info | 0 | 0.25 | R/1 | R/3 |
| 12 | A-ROOF-RFDR | A-ROOFRDM- | Roof drains | 0 | 0.25 | R/1 | R/3 |
| 13 | A-ROOF-GUTR | A-ROOFGUM- | Roof internal gutters | 0 | 0.18 | Gr/8 | Gr/9 |
| 14 | A-ROOF-EXPJ | A-ROOFEXM- | Expansion joints | 0 | 0.18 | B/5 | B/1 |
| 15 | A-ROOF-HRAL | A-ROOFHRM- | Stair handrails, nosings, guard rails | 0 | 0.18 | B/5 | B/1 |
| 16 | A-ROOF-LEVL | A-ROFFLEM- | Level changes | 0 | 0.18 | B/5 | B/1 |
| 17 | A-ROOF-OTLN | A-ROOFOTM- | Roof perimeter/edge, roof geometry | 0 | 0.35 | M/6 | M/5 |
| 18 | A-ROOF-PATT | A-ROOFPAM- | Roof surface patterns, hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 19 | A-ROOF-SPCL | A-ROOFSPM- | Roof specialties, accessories, access hatches, dormers | 0 | 0.25 | G/3 | G/2 |
| 20 | A-ROOF-STRS | A-ROOFSTM- | Stair risers/treads, ladders | 0 | 0.18 | B/5 | B/1 |
| 21 | A-ROOF-WALK | A-ROOFWAM- | Roof walkways | 0 | 0.25 | G/3 | G/2 |
| 22 | A-ROOF-WALL | A-ROOFWLM- | Parapet walls and wall caps | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Architectural**

**Model File Type: Equipment Plan**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Equipment** | | | | | | | |
| 11 | A-EQPM-ACCS | A-EQPMACM- | Equipment access | 0 | 0.35 | M/6 | M/5 |
| 12 | A-EQPM-OVHD | A-EQPMOVM- | Overhead, ceiling mounted, or suspended equipment | 0 | 0.35 | M/6 | M/5 |
| 13 | A-EQPM-FIXD | A-EQPMFIM- | Fixed equipment | 0 | 0.50 | C/4 | C/7 |
| 14 | A-EQPM-IDEN | A-EQPMIDM- | Equipment identification numbers | 0 | 0.35 | M/6 | M/5 |
| 15 | A-EQPM-MOVE | A-EQPMMOM- | Moveable equipment | 0 | 0.35 | M/6 | M/5 |
| 16 | A-EQPM-NICN | A-EQPMNCM- | Not in contract equipment | 3 | 0.35 | M | M |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A-----M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A-----M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A-----M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note: V = Varies, NA = Not Applicable**

**Discipline: Architectural**

**Model File Type: Area Calculations/Occupancy Plan**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A---KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A---TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Area Information** | | | | | | | |
| 9 | A-AREA-IDEN | A-AREAIDM- | Room numbers, tenant identifications, area calculations | 0 | 0.35 | Y/2 | Y/4 |
| 10 | A-AREA-LINE | A-AREALIM- | Architectural area calculation boundary lines | 0 | 0.50 | C/4 | C/7 |
| 11 | A-AREA-OCCP | A-AREAOCM- | Occupant or employee names | 0 | 0.35 | Y/2 | Y/4 |
| 12 | A-AREA-PATT | A-AREAPAM- | Area cross hatching | 0 | 0.18 | Gr/8 | Gr/9 |

Note: V = Varies, NA = Not Applicable

**Discipline: Architectural**

**Model File Type: Elevations (Exterior and Interior)**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Elevations** | | | | | | | |
| 37 | A-ELEV-CASE | A-ELEVCAM- | Wall-mounted casework | 0 | 0.25 | G/3 | G/2 |
| 38 | A-ELEV-FIXT | A-ELEVFIM- | Miscellaneous fixtures | 0 | 0.35 | Y/2 | Y/4 |
| 39 | A-ELEV-FNSH | A-ELEVFNM- | Finishes, woodwork, trim | 0 | 0.25 | G/3 | G/2 |
| 40 | A-ELEV-IDEN | A-ELEVIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 41 | A-ELEV-OTLN | A-ELEVOTM- | Building outlines | 0 | 0.35 | M/6 | M/5 |
| 42 | A-ELEV-PATT | A-ELEVPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 43 | A-ELEV-PFIX | A-ELEVPFM- | Plumbing fixtures | 0 | 0.35 | M/6 | M/5 |
| 44 | A-ELEV-SIGN | A-ELEVSIM- | Signage | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Architectural**

**Model File Type: Sections**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A---NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A---NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | A-ANNO-REFR | A----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Sections** | | | | | | | |
| 45 | A-SECT-IDEN | A-SECTIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 46 | A-SECT-MBND | A-SECTMBM- | Material beyond section cut | 0 | 0.18 | B/5 | B/1 |
| 47 | A-SECT-MCUT | A-SECTMCM- | Material cut by section | V | V | V | V |
| 48 | A-SECT-PATT | A-SECTPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A-----M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A-----M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A-----M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Architectural**

**Model File Type: Details**

| Level # | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-NPLT | A----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | A-ANNO-PATT | A----PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A----SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A----TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | A-DETL-GRPH | A-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | A-DETL-METR | A-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | A-DETL-INPD | A-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition** | | | | | | | |
| 56 | A-STAT-DEMO-PHS1 | A------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | A-STAT-DEMO-PHS2 | A------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | A-STAT-DEMO-PHS3 | A------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Interiors**

**Model File Type: Furniture Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-NPLT | I-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | I-ANNO-PATT | I-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | I-ANNO-REFR | I-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Equipment** | | | | | | | |
| 11 | I-EQPM-ACCS | I-EQPMACM- | Equipment access | 2 | 0.18 | Gr/8 | Gr/9 |
| 12 | I-EQPM-CHLD | I-EQPMCHM- | Child development (play toys, teaching rugs, play forms) | 0 | 0.35 | Y/2 | Y/4 |
| 13 | I-EQPM-OVHD | I-EQPMOVM- | Overhead, ceiling mounted, and suspended equipment | 0 | 0.25 | G/3 | G/2 |
| 14 | I-EQPM-COPY | I-EQPMCOM- | Copiers, fax machines, office equipment | 0 | 0.35 | Y/2 | Y/4 |
| 15 | I-EQPM-FIXD | I-EQPMFIM- | Fixed equipment | 0 | 0.18 | B/5 | B/1 |
| 16 | I-EQPM-IDEN | I-EQPMIDM- | Equipment identification numbers | 0 | 0.25 | R/1 | R/3 |
| 17 | I-EQPM-MOVE | I-EQPMMOM- | Moveable equipment | 2 | 0.18 | B/5 | B/1 |
| 18 | I-EQPM-NICN | I-EQPMNIM- | Not in contract equipment | 1 | 0.18 | Gr/8 | Gr/9 |
| 19 | I-EQPM-STOR | I-EQPMSTM- | Storage equipment | 0 | 0.35 | Y/2 | Y/4 |
| 20 | I-EQPM-MEDI | I-FURNMEM- | Medical (exam beds, dental chairs, etc.) | 0 | 0.35 | Y/2 | Y/4 |
| **Furnishings** | | | | | | | |
| 25 | I-FURN-ACCS | I-FURNACM- | Accessories (vestibule matts, partitions, draperies, clocks, trash cans, lecterns, lamps, etc.) | 0 | 0.25 | R/1 | R/3 |
| 26 | I-FURN-ADPC | I-FURNADM- | Automated Data Processing Components | 0 | 0.35 | Y/2 | Y/4 |
| 27 | I-FURN-ARTW | I-FURNARM- | Artwork | 0 | 0.35 | Y/2 | Y/4 |
| 29 | I-FURN-FLOR | I-FURNFLM- | Flooring (carpet, rugs, etc.) | 0 | 0.35 | Y/2 | Y/4 |
| 30 | I-FURN-FREE | I-FURNFRM- | Free-standing furnishings (desks, beds, tables, dressers, credenzas, casegoods) | 0 | 0.35 | M/6 | M/5 |
| 31 | I-FURN-IDEN | I-FURNIDM- | Furniture code identification | 0 | 0.25 | G/3 | G/2 |
| 34 | I-FURN-PLNT | I-FURNPLM- | Plants | 0 | 0.25 | R/1 | R/3 |
| 35 | I-FURN-SEAT | I-FURNSEM- | Chairs, sofas, etc. | 0 | 0.35 | Y/2 | Y/4 |
| 36 | I-FURN-STOR | I-FURNSTM- | File cabinets, high density storage, shelving, storage cabinets | 0 | 0.35 | Y/2 | Y/4 |
| **Modules** | | | | | | | |
| 40 | I-FURN-GRID | I-FURNGRM- | Planning grid/modular outline | 0 | 0.50 | C/4 | C/7 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | I-STAT-DEMO-PHS1 | I-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | I-STAT-DEMO-PHS2 | I-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | I-STAT-DEMO-PHS3 | I-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Interiors

### Model File Type: System Furniture Plan/Workstation Typical

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-NPLT | I-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | I-ANNO-PATT | I-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | I-ANNO-REFR | I-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Systems Furniture** | | | | | | | |
| 11 | I-SYST-FURN | I-SYSTFUM- | Furniture | 0 | 0.35 | Y/2 | Y/4 |
| 12 | I-SYST-IDEN | I-SYSTIDM- | Code identification | 0 | 0.25 | R/1 | R/3 |
| 13 | I-SYST-LITE | I-SYSTLIM- | Lighting components | 0 | 0.50 | C/4 | C/7 |
| 14 | I-SYST-PATT | I-SYSTPAM- | Patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 15 | I-SYST-PNLS | I-SYSTPNM- | Panels | 0 | 0.35 | Y/2 | Y/4 |
| 16 | I-SYST-POWR | I-SYSTPOM- | Power, communication components | 0 | 0.50 | C/4 | C/7 |
| 17 | I-SYST-STOR | I-SYSTSTM- | Storage components | 0 | 0.35 | Y/2 | Y/4 |
| 18 | I-SYST-WALL | I-SYSTWAM- | Systems furniture partition walls | 0 | 0.35 | Y/2 | Y/4 |
| 19 | I-SYST-WKSF | I-SYSTWKM- | Work surface components | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | I-STAT-DEMO-PHS1 | I-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | I-STAT-DEMO-PHS2 | I-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | I-STAT-DEMO-PHS3 | I-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Interiors

### Model File Type: Signage Placement Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-NPLT | I----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | I-ANNO-PATT | I----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | I-ANNO-REFR | I-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Signage** | | | | | | | |
| 46 | I-FLOR-SIGN | I-FLORSIM- | Signage | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | I-STAT-DEMO-PHS1 | I------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | I-STAT-DEMO-PHS2 | I------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | I-STAT-DEMO-PHS3 | I------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Interiors

### Model File Type: Elevations

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-NPLT | I----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | I-ANNO-PATT | I----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | I-ANNO-REFR | I----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Elevations** | | | | | | | |
| 37 | I-ELEV-CASE | I-ELEVCAM- | Wall mounted casework | 0 | 0.35 | Y/2 | Y/4 |
| 38 | I-ELEV-FIXT | I-ELEVFIM- | Miscellaneous fixtures | 0 | 0.25 | G/3 | G/2 |
| 39 | I-ELEV-FNSH | I-ELEVFNM- | Finishes, woodwork and trim | 0 | 0.35 | Y/2 | Y/4 |
| 40 | I-ELEV-IDEN | I-ELEVIDM- | Component identification numbers | 0 | 0.18 | B/5 | B/1 |
| 42 | I-ELEV-PATT | I-ELEVPAM- | Textures and hatch patterns | 0 | 0.25 | R/1 | R/3 |
| 43 | I-ELEV-PFIX | I-ELEVPFM- | Plumbing fixtures in elevation | 0 | 0.25 | R/1 | R/3 |
| 44 | I-ELEV-SIGN | I-ELEVSIM- | Signage | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | I-STAT-DEMO-PHS1 | I------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | I-STAT-DEMO-PHS2 | I------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | I-STAT-DEMO-PHS3 | I------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Interiors**

**Model File Type: Details**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-NPLT | I----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | I-ANNO-PATT | I----PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I----SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I----TEP- | Detail title text, text and associated leaders, notes | 0 | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | I-DETL-GRPH | I-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | I-DETL-METR | I-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | I-DETL-INPD | I-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition** | | | | | | | |
| 56 | I-STAT-DEMO-PHS1 | I-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | I-STAT-DEMO-PHS2 | I-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | I-STAT-DEMO-PHS3 | I-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Fire Protection

Model File Type: Life Safety Plan

| Level # | Level/Layer Naming | | | | Graphics | | | |
|---|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | Level/Layer Description | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | | |
| 1 | F-ANNO-DIMS | F-——DIP- | Witness/extension lines, dimension terminators, dimension text | | 0 | V | V | V |
| 2 | F-ANNO-KEYN | F-——KEP- | Reference keynotes with associated leaders | | 0 | V | V | V |
| 3 | F-ANNO-NPLT | F-——NPP- | Non-plotting graphic information | | V | 0.18 | B/5 | B/1 |
| 4 | F-ANNO-PATT | F-——PAP- | Miscellaneous patterning and hatching | | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | F-ANNO-NOTE | F-——NOP- | General notes and general remarks | | 0 | 0.35 | Y/2 | Y/4 |
| 6 | F-ANNO-SYMB | F-——SYP- | Miscellaneous symbols | | V | 0.35 | M/6 | M/5 |
| 7 | F-ANNO-TEXT | F-——TEP- | Miscellaneous text and callouts with associated leaders | | 0 | V | V | V |
| NA | F-ANNO-REFR | F-——RFP- | Reference files (AutoCAD users only, see Chapter 4) | | NA | NA | NA | NA |
| **Floor Information** | | | | | | | | |
| 8 | F-FLOR-IDEN | F-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | | 0 | 0.25 | G/3 | G/2 |
| 9 | F-FLOR-NUMB | F-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | | 0 | 0.25 | G/3 | G/2 |
| **Fire Protection/Suppression Equipment** | | | | | | | | |
| 11 | F-PROT-CABN | F-PROTCAM- | Fire hose cabinets | | 0 | 0.35 | Y/2 | Y/4 |
| 12 | F-PROT-EXTN | F-PROTEXM- | Fire extinguishers and fire extinguisher cabinets | | 0 | 0.35 | Y/2 | Y/4 |
| 13 | F-PROT-HOSE | F-PROTHOM- | Fire hoses | | 0 | 0.35 | Y/2 | Y/4 |
| **Fire Ratings** | | | | | | | | |
| 14 | F-RATE-WALL | F-RATEWAM- | Wall fire ratings | | 0 | 0.50 | C/4 | C/7 |
| 15 | F-RATE-DOOR | F-RATEDOM- | Door fire ratings | | 0 | 0.50 | C/4 | C/7 |
| **Means of Egress Lighting** | | | | | | | | |
| 19 | F-LITE-EMER | F-LITEEMM- | Emergency fixtures | | 0 | 0.50 | 23 | 46 |
| 20 | F-LITE-EXIT | F-LITEEXM- | Exit fixtures | | 0 | 0.50 | 203 | 45 |
| **Egress Requirements** | | | | | | | | |
| 22 | F-LSFT-EGRE | F-LSFTEGM- | Egress requirements designator | | 0 | 0.35 | M/6 | M/5 |
| 23 | F-LSFT-TRVL | F-LSFTTRM- | Maximum travel distances | | 0 | 0.35 | M/6 | M/5 |
| 24 | F-LSFT-OCCP | F-LSFTOCM- | Occupant load for egress capacity | | 0 | 0.35 | M/6 | M/5 |
| **Control Panels** | | | | | | | | |
| 26 | F-CTRL-PANL | F-CTRLPAM- | Control panels | | 0 | 0.50 | 23 | 46 |
| **Fire Alarm/Detection Equipment** | | | | | | | | |
| 31 | F-ALRM-MANL | F-ALRMMAM- | Manual fire alarm pull stations | | 0 | 0.50 | 23 | 46 |
| **Smoke/Pressurization Control** | | | | | | | | |
| 38 | F-SMOK-DAMP | F-SMOKDAM- | Dampers | | 0 | 0.35 | 22 | 22 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | | |
| 56 | F-STAT-DEMO-PHS1 | F-——M-D-—1 | Demolition - phase 1 | | 0 | 0.50 | 203 | 45 |
| 57 | F-STAT-DEMO-PHS2 | F-——M-D-—2 | Demolition - phase 2 | | 0 | 0.50 | 83 | 42 |
| 58 | F-STAT-DEMO-PHS3 | F-——M-D-—3 | Demolition - phase 3 | | 0 | 0.50 | 163 | 41 |

Note:  V = Varies, NA = Not Applicable

## Discipline: Fire Protection

**Model File Type: Fire Suppression Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | F-ANNO-DIMS | F----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | F-ANNO-KEYN | F----KEP | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | F-ANNO-NPLT | F----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | F-ANNO-PATT | F----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | F-ANNO-NOTE | F----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | F-ANNO-SYMB | F----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | F-ANNO-TEXT | F----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | F-ANNO-REFR | F----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | F-FLOR-IDEN | F-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | F-FLOR-NUMB | F-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **CO2 Sprinkler System** | | | | | | | |
| 11 | F-CO2S-EQPM | F-CO2SEQM- | Equipment | 0 | 0.35 | M/6 | M/5 |
| 12 | F-CO2S-PIPE | F-CO2SPIM- | CO2 piping or CO2 discharge nozzle piping | 0 | 0.35 | M/6 | M/5 |
| **Aqueous Film Forming Foam System** | | | | | | | |
| 14 | F-AFFF-EQPM | F-AFFFEQM- | Equipment | 0 | 0.35 | 82 | 18 |
| 15 | F-AFFF-PIPE | F-AFFFPIM- | Piping | 0 | 0.35 | 82 | 18 |
| **Halon System** | | | | | | | |
| 17 | F-HALN-EQPM | F-HALNEQM- | Halon equipment | 0 | 0.35 | 22 | 22 |
| 18 | F-HALN-PIPE | F-HALNPIM- | Halon piping | 0 | 0.35 | 22 | 22 |
| **Inert Gas** | | | | | | | |
| 20 | F-IGAS-EQPM | F-IGASEQM- | Inert gas equipment | 0 | 0.35 | 162 | 33 |
| 21 | F-IGAS-PIPE | F-IGASPIM- | Inert gas piping | 0 | 0.35 | 162 | 33 |
| **Sprinkler System** | | | | | | | |
| 23 | F-SPRN-CLHD | F-SPRNCLM- | Sprinkler - ceiling heads | 0 | 0.35 | 122 | 23 |
| 24 | F-SPRN-OTHD | F-SPRNOTM- | Sprinkler - other heads | 0 | 0.35 | 122 | 23 |
| 25 | F-SPRN-PIPE | F-SPRNPIM- | Sprinkler piping | SPRINK | 0.50 | C/4 | C/7 |
| 26 | F-SPRN-STAN | F-SPRNSTM- | Standpipe system | 0 | 0.35 | 122 | 23 |
| **Water Supply and Distribution** | | | | | | | |
| 31 | F-WATR-PIPE | F-WATRPIM- | Piping | FIRE | 0.50 | C/4 | C/7 |
| 32 | F-WATR-CONN | F-WATRCOM- | Fire department connections | 0 | 0.35 | 122 | 23 |
| 33 | F-WATR-HYDR | F-WATRHYM- | Hydrants | 0 | 0.35 | 122 | 23 |
| 34 | F-WATR-PUMP | F-WATRPUM- | Fire pumps | 0 | 0.35 | 122 | 23 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | F-STAT-DEMO-PHS1 | F------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | F-STAT-DEMO-PHS2 | F------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | F-STAT-DEMO-PHS3 | F------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Fire Protection

### Model File Type: Fire Alarm/Detection Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | F-ANNO-DIMS | F-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | F-ANNO-KEYN | F-----KEP | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | F-ANNO-NPLT | F-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | F-ANNO-PATT | F-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | F-ANNO-NOTE | F-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | F-ANNO-SYMB | F-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | F-ANNO-TEXT | F-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | F-ANNO-REFR | F-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | F-FLOR-IDEN | F-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | F-FLOR-NUMB | F-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Control Panels** | | | | | | | |
| 26 | F-CTRL-PANL | F-CTRLPAM- | Control panels | 0 | 0.50 | 23 | 46 |
| **Fire Alarm/Detection Equipment** | | | | | | | |
| 31 | F-ALRM-MANL | F-ALRMMAM- | Manual fire alarm pull stations | 0 | 0.50 | 23 | 46 |
| 33 | F-ALRM-DTCT | F-ALRMDTM- | Smoke/heat/other detectors | 0 | 0.50 | 23 | 46 |
| 34 | F-ALRM-INDC | F-ALRMINM- | Indicating appliances | 0 | 0.50 | 83 | 42 |
| **Smoke/Pressurization Control** | | | | | | | |
| 38 | F-SMOK-DAMP | F-SMOKDAM- | Dampers | 0 | 0.35 | 22 | 22 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | F-STAT-DEMO-PHS1 | F-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | F-STAT-DEMO-PHS2 | F-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | F-STAT-DEMO-PHS3 | F-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Fire Protection

**Model File Type: Details**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphic0 Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | F-ANNO-DIMS | F----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | F-ANNO-KEYN | F----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | F-ANNO-NPLT | F----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | F-ANNO-PATT | F-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | F-ANNO-NOTE | F----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | F-ANNO-SYMB | F----SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | F-ANNO-TEXT | F----TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | F-DETL-GRPH | F-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | F-DETL-METR | F-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | F-DETL-INPD | F-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | F-STAT-DEMO-PHS1 | F------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | F-STAT-DEMO-PHS2 | F------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | F-STAT-DEMO-PHS3 | F------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies

**Discipline: Plumbing**

**Model File Type: Piping Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | P-ANNO-DIMS | P-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | P-ANNO-KEYN | P-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | P-ANNO-NPLT | P-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | P-ANNO-PATT | P-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | P-ANNO-NOTE | P-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | P-ANNO-SYMB | P-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | P-ANNO-TEXT | P-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | P-ANNO-REFR | P-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | P-FLOR-IDEN | P-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | P-FLOR-NUMB | P-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Domestic Water Piping System** | | | | | | | |
| 10 | P-DOMW-ACCS | P-DOMWACM- | Equipment access doors | 0 | 0.35 | 82 | 18 |
| 11 | P-DOMW-CPIP | P-DOMWCPM- | Domestic cold water piping | CLDWTR | 0.50 | 123 | 31 |
| 12 | P-DOMW-EQPM | P-DOMWEQM- | Hot and cold water equipment | 0 | 0.70 | 7 | 0 |
| 13 | P-DOMW-FPIP | P-DOMWFPM- | Domestic filtered water piping | 0 | 0.50 | 83 | 42 |
| 14 | P-DOMW-HPIP | P-DOMWHPM- | Domestic hot water piping | HWTR, HWTRR | 0.50 | 113 | 16 |
| 15 | P-DOMW-RISR | P-DOMWRIM- | Domestic hot and cold water risers | 2 | 0.25 | G/3 | G/2 |
| **Sanitary Drainage Piping** | | | | | | | |
| 20 | P-SANR-COND | P-SANRCOM- | Condensate piping | 0 | 0.50 | 83 | 42 |
| 22 | P-SANR-EQPM | P-SANREQM- | Equipment (e.g., sand/oil/water separators) | 0 | 0.70 | 204 | 37 |
| 23 | P-SANR-FLDR | P-SANRFLM- | Floor drains, sinks, and cleanouts | 0 | 0.35 | M/6 | M/5 |
| 24 | P-SANR-PIPE | P-SANRPIM- | Piping | SSWAF | 0.50 | 203 | 45 |
| 25 | P-SANR-RISR | P-SANRRIM- | Sanitary risers | 2 | 0.50 | 203 | 45 |
| 26 | P-SANR-VENT | P-SANRVEM- | Vent piping | VENT | 0.50 | 203 | 45 |
| **Storm Drainage Piping** | | | | | | | |
| 31 | P-STRM-PIPE | P-STRMPIM- | Storm drain piping | STRAF | 0.50 | 163 | 41 |
| 32 | P-STRM-RFDR | P-STRMRFM- | Roof drains | 0, ROOFDN | 0.50 | 163 | 41 |
| 33 | P-STRM-RISR | P-STRMRIM- | Storm drain risers | 2 | 0.50 | 163 | 41 |
| **Compressed Air** | | | | | | | |
| 36 | P-CMPA-EQPM | P-CMPAEQM- | Equipment | 0 | 0.70 | 84 | 34 |
| 37 | P-CMPA-PIPE | P-CMPAPIM- | Piping | CMPAIR | 0.50 | 83 | 42 |
| **Fuel Systems** | | | | | | | |
| 38 | P-FUEL-EQPM | P-FUELEQM- | Equipment | 0 | 0.70 | 24 | 38 |
| 39 | P-FUEL-NGAS | P-FUELNGM- | Natural gas piping | NTGASN | 0.50 | 23 | 46 |
| 40 | P-FUEL-FGAS | P-FUELFGM- | Fuel gas piping | LIQPET | 0.50 | 23 | 46 |
| 41 | P-FUEL-FOIL | P-FUELFOM- | Fuel oil piping | FUELOR, FUELOS, FUELOV | 0.50 | 23 | 46 |
| **Medical/Dental Piping** | | | | | | | |
| 42 | P-MDGS-EQPM | P-MDGSEQM- | Equipment | 0 | 0.70 | 24 | 38 |
| 43 | P-MDGS-PIPE | P-MDGSPIM- | Piping | OXYGEN, NITOXI, VACAIR | 0.50 | 23 | 46 |
| **Laboratory Piping** | | | | | | | |
| 45 | P-LGAS-EQPM | P-LGASEQM- | Equipment | 0 | 0.70 | 24 | 38 |
| 46 | P-LGAS-PIPE | P-LGASPIM- | Piping | OXYGEN, NITROG, HELIUM, HYDRGN, ACIDWS, DSTWTR, DIOWTR | 0.50 | 23 | 46 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | P-STAT-DEMO-PHS1 | P-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | P-STAT-DEMO-PHS2 | P-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | P-STAT-DEMO-PHS3 | P-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 61 | P-PENE-FLOR | P-PENEFLM- | Floor penetrations | 2 | 0.25 | G/3 | G/2 |
| 62 | P-PENE-ROOF | P-PENEROM- | Roof penetrations | 2 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

## Discipline: Plumbing

### Model File Type: Details

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | P-ANNO-DIMS | P-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | P-ANNO-KEYN | P-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | P-ANNO-NPLT | P-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | P-ANNO-PATT | P-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | P-ANNO-NOTE | P-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | P-ANNO-SYMB | P-----SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | P-ANNO-TEXT | P-----TEP- | Detail title text, text and associated leaders, notes | V | V | V | |
| **Detail Information** | | | | | | | |
| 11 | P-DETL-GRPH | P-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | P-DETL-METR | P-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | P-DETL-INPD | P-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | P-STAT-DEMO-PHS1 | P-------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | P-STAT-DEMO-PHS2 | P-------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | P-STAT-DEMO-PHS3 | P-------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies

## Discipline: Plumbing

### Model File Type: Riser Diagrams

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | P-ANNO-DIMS | P-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | P-ANNO-KEYN | P-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | P-ANNO-NPLT | P-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | P-ANNO-PATT | P-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | P-ANNO-NOTE | P-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | P-ANNO-SYMB | P-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | P-ANNO-TEXT | P-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | P-ANNO-REFR | P-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Diagram Information** | | | | | | | |
| 11 | P-DIAG-GRPH | P-DIAGGRM- | Graphics, gridlines, non-text items | 0, 2 | V | V | V |
| 12 | P-DIAG-METR | P-DIAGMEM- | Metric-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| 13 | P-DIAG-INPD | P-DIAGINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Other Discipline Information** | | | | | | | |
| 60 | P-DISC-INFO | P-DISCINM- | Information and notes for other disciplines | V | V | V | V |

Note: V = Varies, NA = Not Applicable

**Discipline: Mechanical**

**Model File Type: HVAC Plan**

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | M-FLOR-IDEN | M-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | M-FLOR-NUMB | M-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Ductwork and Equipment** | | | | | | | |
| 10 | M-HVAC-ACCS | M-HVACACM- | Equipment access doors | 0, 1, 2 | 0.25 | G/3 | G/2 |
| 11 | M-HVAC-DAMP | M-HVACDAM- | Fire and smoke dampers | 0 | 0.25 | R/1 | R/3 |
| 12 | M-HVAC-EQPM | M-HVACEQM- | Equipment | 0 | 0.35 | Y/2 | Y/4 |
| 13 | M-HVAC-ROOF | M-HVACROM- | Roof mounted HVAC equipment | 0 | 0.35 | Y/2 | Y/4 |
| 14 | M-HVAC-RETN | M-HVACREM- | Return ductwork | V | 0.50 | 23 | 46 |
| 15 | M-HVAC-SUPP | M-HVACSUM- | Supply ductwork | V | 0.50 | C/4 | C/7 |
| 16 | M-HVAC-IDEN | M-HVACIDM- | Duct sizes and pressure classes | V | 0.35 | M/6 | M/5 |
| **Diffusers, Registers, and Grilles** | | | | | | | |
| 17 | M-HVAC-CDFF | M-HVACCDM- | Ceiling diffusers, registers, and grilles | 0 | 0.35 | 12 | 27 |
| 18 | M-HVAC-TAGS | M-HVACTAM- | Diffuser/register/grille tags and air flow arrows | 0 | 0.35 | M/6 | M/5 |
| 19 | M-HVAC-WDFF | M-HVACWDM- | Wall diffusers, registers, and grilles | 0 | 0.35 | Y/2 | Y/4 |
| 20 | M-HVAC-FDFF | M-HVACFDM- | Floor diffusers, registers, and grilles | 0 | 0.35 | 162 | 33 |
| **Exhaust** | | | | | | | |
| 24 | M-EXHS-DUCT | M-EXHSDUM- | Exhaust ductwork | V | 0.50 | 83 | 42 |
| **Dust and Fume Collection Systems** | | | | | | | |
| 28 | M-DUST-DUCT | M-DUSTDUM- | Dust and fume ductwork | 0 | 0.50 | 203 | 45 |
| **Chilled Water System** | | | | | | | |
| 31 | M-CWTR-PIPE | M-CWTRPIM- | Piping (includes fittings, valves) | CWR, CWS | 0.50 | 163 | 41 |
| **Hot Water Heating System** | | | | | | | |
| 33 | M-HWTR-PIPE | M-HWTRPIM- | Piping (includes fittings, valves) | HWR, HWS | 0.50 | 113 | 16 |
| **Condensate** | | | | | | | |
| 34 | M-COND-PIPE | M-CONDPIM- | Condensate piping (includes fittings, valves) | CDRNAF | 0.50 | 83 | 42 |
| **Condenser Water System** | | | | | | | |
| 36 | M-CNDW-PIPE | M-CNDWPIM- | Condenser water piping | CONDWR, CONDWS | 0.50 | 83 | 42 |
| **Controls** | | | | | | | |
| 38 | M-CONT-WIRE | M-CONTWIM- | Low voltage wiring | 1, 2 | 0.25 | R/1 | R/3 |
| 39 | M-CONT-THER | M-CONTTHM- | Thermostats, controls, instrumentation, and sensors | 0 | 0.25 | R/1 | R/3 |
| **Dual Temperature System** | | | | | | | |
| 41 | M-DUAL-PIPE | M-DUALPIM- | Piping (includes fittings, valves) | DTR, DTS | 0.50 | 23 | 46 |
| **Steam System** | | | | | | | |
| 43 | M-STEM-PIPE | M-STEMPIM- | Steam piping | STEAM | 0.50 | 113 | 16 |
| **Refrigeration System** | | | | | | | |
| 45 | M-REFG-PIPE | M-REFGPIM- | Piping (includes fittings, valves) | REFRD, REFRL, REFRS | 0.50 | 163 | 41 |
| **Energy Recovery System** | | | | | | | |
| 47 | M-RCOV-PIPE | M-RCOVPIM- | Piping (includes fittings, valves) | 0 | 0.50 | 203 | 45 |
| **Chemical Treatment System** | | | | | | | |
| 49 | M-CHEM-PIPE | M-CHEMPIM- | Piping (includes fittings, valves) | 0 | 0.50 | 123 | 31 |
| **Geothermal Heat Pump System** | | | | | | | |
| 51 | M-GTHP-PIPE | M-GTHPPIM- | Piping (includes fittings, valves) | 0 | 0.50 | 203 | 45 |

**Discipline: Mechanical**

**Model File Type: HVAC Plan**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M——M-D—1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M——M-D—2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M——M-D—3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 59 | M-DISC-INFO | M-DISCINM- | Clearances and working space information | 0, 1 | 0.25 | G/3 | G/2 |
| 61 | M-PENE-FLOR | M-PENEFLM- | Floor penetrations | 2 | 0.25 | G/3 | G/2 |
| 62 | M-PENE-ROOF | M-PENEROM- | Roof penetrations | 2 | 0.25 | R/1 | R/3 |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Mechanical
### Model File Type: Specialty Piping and Equipment

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | M-FLOR-IDEN | M-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | M-FLOR-NUMB | M-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Brine Systems** | | | | | | | |
| 11 | M-BRIN-EQPM | M-BRINEQM- | Brine system equipment | 0 | 0.35 | M/6 | M/5 |
| 12 | M-BRIN-PIPE | M-BRINPIM- | Brine system piping | BRINER, BRINES | 0.35 | Y/2 | Y/4 |
| **Anti-freeze** | | | | | | | |
| 19 | M-AFRZ-PIPE | M-AFRZPIM- | Anti-freeze piping | 0 | 0.35 | 82 | 18 |
| 20 | M-AFRZ-WAST | M-AFRZWAM- | Waste anti-freeze piping | 0 | 0.35 | 82 | 18 |
| **Hydraulic Systems** | | | | | | | |
| 22 | M-HYDR-EQPM | M-HYDREQM- | Hydraulic system equipment | 0 | 0.35 | M/6 | M/5 |
| 23 | M-HYDR-PIPE | M-HYDRPIM- | Hydraulic system piping | 0 | 0.35 | Y/2 | Y/4 |
| **Industrial Waste Piping** | | | | | | | |
| 25 | M-ACID-EQPM | M-ACIDEQM- | Acid, alkaline, and oil waste equipment | 0 | 0.35 | M/6 | M/5 |
| 26 | M-ACID-PIPE | M-ACIDPIM- | Acid, alkaline, and oil waste piping | ACIDWS | 0.35 | Y/2 | Y/4 |
| 27 | M-ACID-VENT | M-ACIDVEM- | Acid, alkaline, and oil waste vent piping | 2 | 0.35 | Y/2 | Y/4 |
| **Insulating (Transformer) Oil** | | | | | | | |
| 28 | M-INSL-EQPM | M-INSLEQM- | Insulating oil equipment | 0 | 0.35 | M/6 | M/5 |
| 29 | M-INSL-PIPE | M-INSLPIM- | Insulating oil piping | 0 | 0.35 | Y/2 | Y/4 |
| **Lubrication Oil** | | | | | | | |
| 33 | M-LUBE-EQPM | M-LUBEEQM- | Lubrication oil equipment | 0 | 0.35 | M/6 | M/5 |
| 34 | M-LUBE-PIPE | M-LUBEPIM- | Lubrication oil piping | 0 | 0.35 | Y/2 | Y/4 |
| **Process Piping** | | | | | | | |
| 40 | M-PROC-EQPM | M-PROCEQM- | Equipment | 0 | 0.35 | M/6 | M/5 |
| 42 | M-PROC-PIPE | M-PROCPIM- | Process piping | 0 | 0.35 | Y/2 | Y/4 |
| **Raw Water Piping** | | | | | | | |
| 44 | M-RWTR-EQPM | M-RWTREQM- | Raw water equipment | 0 | 0.35 | M/6 | M/5 |
| 45 | M-RWTR-PIPE | M-RWTRPIM- | Raw water piping | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 59 | M-DISC-INFO | M-DISCINM- | Clearances and working space information | 0, 1 | 0.25 | G/3 | G/2 |
| 61 | M-PENE-FLOR | M-PENEFLM- | Floor penetrations | 2 | 0.25 | G/3 | G/2 |
| 62 | M-PENE-ROOF | M-PENEROM- | Roof penetrations | 2 | 0.25 | R/1 | R/3 |

Note: V = Varies, NA = Not Applicable

**Discipline: Mechanical**

**Model File Type: HTCW Utilities Plan**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Devices** | | | | | | | |
| 11 | M-HTCW-DEVC | M-HTCWDEM- | Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves | 0 | 0.35 | M/6 | M/5 |
| **Stations** | | | | | | | |
| 16 | M-HTCW-PUMP | M-HTCWPUM- | Pump stations | 0 | 0.35 | M/6 | M/5 |
| 18 | M-HTCW-STNS-IDEN | M-HTCWSIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Plants** | | | | | | | |
| 19 | M-HTCW-CHLP | M-HTCWCPM- | Chilled water plant | 0 | 0.35 | M/6 | M/5 |
| 20 | M-HTCW-HTPP | M-HTCWHPM- | High temperature water plant | 0 | 0.35 | M/6 | M/5 |
| 21 | M-HTCW-PLNT-IDEN | M-HTCWPIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Junction Boxes** | | | | | | | |
| 22 | M-HTCW-JBOX | M-HTCWJBM- | Junction boxes, manholes, handholes, test boxes | 0 | 0.25 | R/1 | R/3 |
| **Pits** | | | | | | | |
| 25 | M-HTCW-PITS | M-HTCWPTM- | Valve pits/vaults, steam pits | 0 | 0.25 | G/3 | G/2 |
| **Piping** | | | | | | | |
| 32 | M-HTCW-ABND | M-HTCWABM- | Abandoned piping | 2 | 0.35 | M/6 | M/5 |
| 33 | M-HTCW-FLOW | M-HTCWFLM- | Flow direction arrows | 0 | 0.25 | G/3 | G/2 |
| 34 | M-HTCW-CHLL | M-HTCWCHM- | Main chilled water piping | 0 | 0.35 | M/6 | M/5 |
| 35 | M-HTCW-CHLS | M-HTCWCSM- | Chilled water service piping | 0 | 0.25 | G/3 | G/2 |
| 37 | M-HTCW-FTTG | M-HTCWFTM- | Caps and flanges | 0 | 0.35 | M/6 | M/5 |
| 38 | M-HTCW-HTPL | M-HTCWHTM- | Main high temperature piping | 0 | 0.25 | R/1 | R/3 |
| 39 | M-HTCW-HTPS | M-HTCWHSM- | High temperature service piping | 0 | 0.25 | G/3 | G/2 |
| 40 | M-HTCW-IDEN | M-HTCWIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 41 | M-HTCW-LTPL | M-HTCWLTM- | Main low temperature piping | 0 | 0.35 | Y/2 | Y/4 |
| 42 | M-HTCW-LTPS | M-HTCWLSM- | Low temperature service piping | 0 | 0.25 | G/3 | G/2 |
| 45 | M-HTCW-RTRN | M-HTCWRTM- | Return for all HTCW lines | 0 | 0.18 | B/5 | B/1 |
| 48 | M-HTCW-STML | M-HTCWSTM- | Main steam piping | 0 | 0.25 | R/1 | R/3 |
| 49 | M-HTCW-STMS | M-HTCWSSM- | Steam service piping | 0 | 0.25 | G/3 | G/2 |
| **Geothermal Heat Pump System** | | | | | | | |
| 50 | M-GTHP-EQPM | M-GTHPEQM- | Equipment | 0 | 0.35 | M/6 | M/5 |
| 51 | M-GTHP-PIPE | M-GTHPPIM- | Piping (includes fittings, valves) | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M-----M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M-----M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M-----M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Mechanical**

**Model File Type: Material Handling**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphics Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Material Handling** | | | | | | | |
| 43 | M-MATL-CRAN | M-MATLCRM- | Bridge cranes, jib cranes, and monorails | 0 | 0.35 | Y/2 | Y/4 |
| 44 | M-MATL-HOIS | M-MATLHOM- | Hoists and hooks | 0 | 0.35 | Y/2 | Y/4 |
| 45 | M-MATL-LIFT | M-MATLLIM- | Miscellaneous lifting equipment | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Mechanical**

**Model File Type: Machine Design**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Machine Design** | | | | | | | |
| 11 | M-MACH-BASE | M-MACHBAM- | Machinery bases | 0 | 0.35 | Y/2 | Y/4 |
| 12 | M-MACH-COMP | M-MACHCOM- | Miscellaneous machinery parts and components | 0 | 0.35 | Y/2 | Y/4 |
| 13 | M-MACH-EXST | M-MACHEXM- | Existing machinery | 0 | 0.25 | G/3 | G/2 |
| 14 | M-MACH-FAST | M-MACHFAM- | Fasteners, nuts, and bolts | 0 | 0.35 | Y/2 | Y/4 |
| 15 | M-MACH-LROT | M-MACHLRM- | Large rotating machinery (turbine and pump outlines) | 0 | 0.35 | M/6 | M/5 |
| 16 | M-MACH-MOTR | M-MACHMOM- | Machinery motors | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

**Discipline: Mechanical**

**Model File Type: Elevations**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M——-DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M——-KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M——-NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M——-PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M——-NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M——-SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M——-TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M——-RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Elevations** | | | | | | | |
| 38 | M-ELEV-FIXT | M-ELEVFIM- | Miscellaneous fixtures | 0 | 0.35 | M/6 | M/5 |
| 40 | M-ELEV-IDEN | M-ELEVIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 41 | M-ELEV-OTLN | M-ELEVOTM- | Building outlines | 0 | 0.35 | M/6 | M/5 |
| 42 | M-ELEV-PATT | M-ELEVPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| 43 | M-ELEV-PFIX | M-ELEVPFM- | Plumbing fixtures | 0 | 0.35 | M/6 | M/5 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M———M-D——1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M———M-D——2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M———M-D——3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

## Discipline: Mechanical

### Model File Type: Sections

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Sections** | | | | | | | |
| 45 | M-SECT-IDEN | M-SECTIDM- | Component identification numbers | 0 | 0.35 | Y/2 | Y/4 |
| 46 | M-SECT-MBND | M-SECTMBM- | Material beyond section cut | V | 0.18 | B/5 | B/1 |
| 47 | M-SECT-MCUT | M-SECTMCM- | Material cut by section | 0 | 0.50 | C/4 | C/7 |
| 48 | M-SECT-PATT | M-SECTPAM- | Textures and hatch patterns | 0 | 0.18 | Gr/8 | Gr/9 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

# Discipline: Mechanical

## Model File Type: Details

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Graphic0 Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Reference bubbles, matchlines and breaklines | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Detail title text, text and associated leaders, notes | V | V | V | V |
| **Detail Information** | | | | | | | |
| 11 | M-DETL-GRPH | M-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | M-DETL-METR | M-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.25 | G/3 | G/2 |
| 13 | M-DETL-INPD | M-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M-------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M-------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M-------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

# Discipline: Mechanical

## Model File Type: Control Diagrams

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-NPLT | M-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | M-ANNO-PATT | M-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | M-ANNO-REFR | M-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Diagram Information** | | | | | | | |
| 11 | M-DIAG-GRPH | M-DIAGGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | M-DIAG-METR | M-DIAGMEM- | Metric-specific dimensions and notes | 0 | 0.25 | G/3 | G/2 |
| 13 | M-DIAG-INPD | M-DIAGINM- | Inch-pound-specific dimensions and notes | 0 | 0.25 | R/1 | R/3 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | M-STAT-DEMO-PHS1 | M-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | M-STAT-DEMO-PHS2 | M-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | M-STAT-DEMO-PHS3 | M-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note:  V = Varies, NA = Not Applicable

Appendix A Model File Level/Layer Assignment Tables

## Discipline: Electrical
## Model File Type: Lighting Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | E-FLOR-IDEN | E-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | E-FLOR-NUMB | E-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Electrical Equipment** | | | | | | | |
| 10 | E-LITE-PANL | E-LITEPAM- | Main distribution panels, switchboards, lighting panels | 0 | 0.50 | C/4 | C/7 |
| **Junction Boxes** | | | | | | | |
| 14 | E-LITE-JBOX | E-LITEJBM- | Junction boxes | 0 | 0.50 | 83 | 42 |
| **Switches** | | | | | | | |
| 16 | E-LITE-SWCH | E-LITESWM- | Lighting contactors, photoelectric controls, low-voltage lighting controls, etc. | 0 | 0.50 | 163 | 41 |
| **Lighting** | | | | | | | |
| 18 | E-LITE-CLNG | E-LITECLM- | Ceiling mounted (surface/pendant) fixtures | 0 | 0.50 | 203 | 45 |
| 19 | E-LITE-EMER | E-LITEEMM- | Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG) | 0 | 0.50 | 23 | 46 |
| 20 | E-LITE-EXIT | E-LITEEXM- | Exit fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG) | 0 | 0.50 | 203 | 45 |
| 21 | E-LITE-FLOR | E-LITEFLM- | Floor mounted fixtures (e.g., stage) | 0 | 0.50 | 203 | 45 |
| 22 | E-LITE-IDEN | E-LITEIDM- | Light fixture identifier tags | 0 | 0.35 | Y/2 | Y/4 |
| 24 | E-LITE-ROOF | E-LITEROM- | Roof lighting | 0 | 0.50 | 203 | 45 |
| 26 | E-LITE-SPCL | E-LITESPM- | Special fixtures | 0 | 0.50 | 203 | 45 |
| 27 | E-LITE-WALL | E-LITEWAM- | Wall mounted fixtures | 0 | 0.50 | 203 | 45 |
| **Circuit Lines** | | | | | | | |
| 47 | E-LITE-CIRC | E-LITECIM- | Lighting circuits (including crosslines and homeruns) | 0 | 0.50 | 83 | 42 |
| 48 | E-LITE-CIRC-NUMB | E-LITECNM- | Lighting circuit numbers (e.g., panel/circuit number, wire/conduit size) | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note: V = Varies, NA = Not Applicable

## Discipline: Electrical

### Model File Type: Power Plan

| Level # | Level/Layer Naming AIA Format | Level/Layer Naming ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | E-FLOR-IDEN | E-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | E-FLOR-NUMB | E-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Electrical Equipment** | | | | | | | |
| 10 | E-POWR-PANL | E-POWRPAM- | Panelboards, switchboards, MCC, unit substations | 0 | 0.50 | C/4 | C/7 |
| **Junction Boxes** | | | | | | | |
| 14 | E-POWR-JBOX | E-POWRJBM- | Junction boxes | 0 | 0.50 | 83 | 42 |
| **Switches** | | | | | | | |
| 16 | E-POWR-SWCH | E-POWRSWM- | Disconnect switches, motor starters, contactors, etc. | 0 | 0.50 | 163 | 41 |
| **Power** | | | | | | | |
| 18 | E-POWR-BUSW | E-POWRBUM- | Busways and wireways | 0, BUSWAY, WIREWY | 0.50 | 203 | 45 |
| 19 | E-POWR-CABL | E-POWRCAM- | Cable trays | 0 | 0.50 | 203 | 45 |
| 20 | E-POWR-CLNG | E-POWRCLM- | Ceiling outlets (receptacles and switches) | 0 | 0.50 | 83 | 42 |
| 21 | E-POWR-FEED | E-POWRFEM- | Feeders | 0 | 0.50 | 203 | 45 |
| 24 | E-POWR-URAC | E-POWRURM- | Underfloor raceways | 3 | 0.50 | 203 | 45 |
| 25 | E-POWR-WALL | E-POWRWAM- | Wall/floor outlets (receptacles and switches) | 0 | 0.50 | 83 | 42 |
| **Motors/Generators** | | | | | | | |
| 27 | E-POWR-MOTR | E-POWRMOM- | Motors and utilization equipment | 0 | 0.50 | C/4 | C/7 |
| 28 | E-POWR-GENR | E-POWRGEM- | Generators and auxiliary equipment | 0 | 0.50 | C/4 | C/7 |
| **Circuit Lines** | | | | | | | |
| 47 | E-POWR-CIRC | E-POWRCIM- | Power circuits (including crosslines and homeruns) | V | 0.50 | 83 | 42 |
| 48 | E-POWR-CIRC-NUMB | E-POWRCNM- | Power circuit numbers (e.g., panel/circuit number, wire/conduit size) | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note: V = Varies, NA = Not Applicable

## Discipline: Electrical

## Model File Type: Special Systems Plan

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E------DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E------KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E------NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E------PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E------NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E------SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E------TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E------RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | E-FLOR-IDEN | E-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | E-FLOR-NUMB | E-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Electrical Equipment** | | | | | | | |
| 10 | E-SPCL-PANL | E-SPCLPAM- | Panelboards, backing boards, patch panel racks | 0 | 0.50 | C/4 | C/7 |
| **Junction Boxes** | | | | | | | |
| 14 | E-SPCL-JBOX | E-SPCLJBM- | Junction boxes | 0 | 0.50 | 83 | 42 |
| **Bell System** | | | | | | | |
| 16 | E-BELL-IDEN | E-BELLIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 17 | E-BELL-SYMB | E-BELLSYM- | Bell system symbols | 0 | 0.50 | 203 | 45 |
| **Central Dictation System** | | | | | | | |
| 18 | E-DICT-IDEN | E-DICTIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 19 | E-DICT-SYMB | E-DICTSYM- | Central dictation system symbols | 0 | 0.50 | 203 | 45 |
| **Clock System** | | | | | | | |
| 20 | E-CLOK-IDEN | E-CLOKIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 21 | E-CLOK-SYMB | E-CLOKSYM- | Clock system symbols | 0 | 0.50 | 203 | 45 |
| **Miscellaneous Alarm System** | | | | | | | |
| 22 | E-ALRM-IDEN | E-ALRMIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 23 | E-ALRM-SYMB | E-ALRMSYM- | Miscellaneous alarm system symbols | 0 | 0.50 | 203 | 45 |
| **Nurse Call/Paging Systems** | | | | | | | |
| 24 | E-NURS-IDEN | E-NURSIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 25 | E-NURS-SYMB | E-NURSSYM- | Nurse call/paging system symbols | 0 | 0.50 | 203 | 45 |
| **Sound System** | | | | | | | |
| 26 | E-SOUN-IDEN | E-SOUNIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 27 | E-SOUN-SYMB | E-SOUNSYM- | Sound system symbols | 0 | 0.50 | 203 | 45 |
| **Cable TV System** | | | | | | | |
| 28 | E-CATV-IDEN | E-CATVIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 29 | E-CATV-SYMB | E-CATVSYM- | Cable television system symbols | 0, CABLTV | 0.50 | 203 | 45 |
| **Closed-Circuit Television System** | | | | | | | |
| 30 | E-CCTV-IDEN | E-CCTVIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 31 | E-CCTV-SYMB | E-CCTVSYM- | Closed-circuit television system symbols | 0 | 0.50 | 203 | 45 |
| **TV Antenna System** | | | | | | | |
| 32 | E-TVAN-IDEN | E-TVANIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 33 | E-TVAN-SYMB | E-TVANSYM- | TV antenna system symbols | 0 | 0.50 | 203 | 45 |
| **Intercom/Public Address System** | | | | | | | |
| 34 | E-INTC-IDEN | E-INTCIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 35 | E-INTC-SYMB | E-INTCSYM- | Intercom/PA system symbols | 0 | 0.50 | 203 | 45 |
| **Energy Monitoring Control Systems** | | | | | | | |
| 36 | E-EMCS-IDEN | E-EMCSIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 37 | E-EMCS-SYMB | E-EMCSSYM- | Energy monitoring control system symbols | 0 | 0.50 | 203 | 45 |
| **Security System** | | | | | | | |
| 38 | E-SERT-IDEN | E-SERTIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 39 | E-SERT-ACCS | E-SERTACM- | Access control system symbols | 0 | 0.50 | 23 | 46 |
| 40 | E-SERT-UNDR | E-SERTUNM- | Buried sensors | 0 | 0.50 | 23 | 46 |
| 41 | E-SERT-CLNG | E-SERTCLM- | Ceiling mounted sensors | 0 | 0.50 | 23 | 46 |
| 42 | E-SERT-FLOR | E-SERTFLM- | Floor mounted sensors | 0 | 0.50 | 23 | 46 |
| 43 | E-SERT-WALL | E-SERTWAM- | Wall mounted sensors | 0 | 0.50 | 23 | 46 |

## Discipline: Electrical

### Model File Type: Special Systems Plan

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Cable System** | | | | | | | |
| 50 | E-CABL-COAX | E-COMMCOM- | Coax cable | 2 | 0.50 | 83 | 42 |
| 51 | E-CABL-FIBR | E-COMMFIM- | Fiber optics cable | FIBOPT | 0.50 | 83 | 42 |
| 52 | E-CABL-IDEN | E-COMMIDM- | Cable identifiers | 0 | 0.35 | Y/2 | Y/4 |
| 53 | E-CABL-MULT | E-COMMMUM- | Multi-conductor cable | V | 0.50 | 83 | 42 |
| 54 | E-CABL-TRAY | E-COMMTRM- | Cable trays and wireways | 0 | 0.50 | 203 | 45 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E——M-D—1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E——M-D—2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E——M-D—3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note:  V = Varies, NA = Not Applicable

# Discipline: Electrical

## Model File Type: Grounding System Plan

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Ground System** | | | | | | | |
| 33 | E-GRND-CIRC | E-GRNDCIM- | Circuits | 0 | 0.50 | C/4 | C/7 |
| 34 | E-GRND-DIAG | E-GRNDDIM- | Ground system diagram | 0 | 0.50 | 163 | 41 |
| 35 | E-GRND-EQUI | E-GRNDEQM- | Equipotential ground system | 0 | 0.50 | 83 | 42 |
| 36 | E-GRND-REFR | E-GRNDREM- | Reference ground system | 0 | 0.50 | 23 | 46 |
| **Lightning Protection System** | | | | | | | |
| 38 | E-LTNG-COND | E-LTNGCOM- | Lightning protection conductors | 0 | 0.50 | 203 | 45 |
| 39 | E-LTNG-TERM | E-LTNGTEM- | Lightning protection terminals | 0 | 0.50 | 203 | 45 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |

Note: V = Varies, NA = Not Applicable

# Discipline: Electrical

## Model File Type: Electrical Utilities Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Primary Electrical Cables** | | | | | | | |
| 11 | E-PRIM-OVHD | E-PRIMOVM- | Overhead electrical utility lines | EPARN | 0.50 | C/4 | C/7 |
| 12 | E-PRIM-OVHD-IDEN | E-PRIMOIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 13 | E-PRIM-UNDR | E-PRIMUNM- | Underground electrical utility lines | EPUGN | 0.50 | C/4 | C/7 |
| 14 | E-PRIM-UNDR-IDEN | E-PRIMUIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Secondary Electrical Cables** | | | | | | | |
| 15 | E-SECD-OVHD | E-SECDOVM- | Overhead electrical utility lines | ESARN | 0.50 | 163 | 41 |
| 16 | E-SECD-OVHD-IDEN | E-SECDOIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 17 | E-SECD-UNDR | E-SECDUNM- | Underground electrical utility lines | ESUGN | 0.50 | 163 | 41 |
| 18 | E-SECD-UNDR-IDEN | E-SECDUIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Transformers** | | | | | | | |
| 19 | E-TRAN-PADM | E-TRANPAM- | Pad mounted transformers | 0 | 0.50 | 23 | 46 |
| 20 | E-TRAN-PADM-IDEN | E-TRANPDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 21 | E-TRAN-POLE | E-TRANPOM- | Pole mounted transformers | 0 | 0.50 | 23 | 46 |
| 22 | E-TRAN-POLE-IDEN | E-TRANPIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Electrical Support Equipment** | | | | | | | |
| 23 | E-ELEC-JBOX | E-ELECJBM- | Junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.50 | 23 | 46 |
| 24 | E-ELEC-DEVC | E-ELECDEM- | Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers | 0 | 0.50 | 23 | 46 |
| 25 | E-ELEC-SWCH | E-ELECSWM- | Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches | 0 | 0.50 | 23 | 46 |
| 26 | E-ELEC-SUBS | E-ELECSUM- | Other substation equipment | 0 | 0.50 | 23 | 46 |
| **Lights** | | | | | | | |
| 31 | E-LITE-EXTR | E-LITEFXM- | Exterior lights | 0 | 0.50 | 203 | 45 |
| 32 | E-LITE-EXTR-IDEN | E-LITEFIM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Utility Poles** | | | | | | | |
| 33 | E-POLE-UTIL | E-POLEUTM- | Utility poles | 0 | 0.50 | 203 | 45 |
| 34 | E-POLE-IDEN | E-POLEUIM- | Utility pole identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 35 | E-POLE-GUYS | E-POLEGYM- | Guying equipment | 0 | 0.50 | 203 | 45 |
| 36 | E-POLE-GUYS-IDEN | E-POLEGIM- | Guying equipment identifier tags, symbol modifiers, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Underground Ductbanks (to be used when multiple systems are in one ductbank system)** | | | | | | | |
| 37 | E-DUCT-MULT | E-DUCTMUM- | Ductbank | EUDUCN | 0.50 | 83 | 42 |
| 38 | E-DUCT-MULT-IDEN | E-DUCTMIM- | Identifier tags, symbol modifier and text | 0 | 0.35 | Y/2 | Y/4 |
| **Cathodic Protection System** | | | | | | | |
| 40 | E-CATH-ANOD | E-CATHANM- | Sacrificial anode system | 0 | 0.50 | 83 | 42 |
| 41 | E-CATH-CURR | E-CATHCUM- | Impress current system | 0 | 0.50 | 83 | 42 |
| 42 | E-CATH-TEST | E-CATHTEM- | Test stations | 0 | 0.50 | 83 | 42 |
| 43 | E-CATH-IDEN | E-CATHIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Special Systems** | | | | | | | |
| 45 | E-SPCL-TRAF | E-SPCLTRM- | Traffic signal system | 0 | 0.50 | 203 | 45 |
| 46 | E-SPCL-TRAF-IDEN | E-SPCLTIM- | Traffic signal identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 47 | E-SPCL-SYST | E-SPCLSYM- | Special systems (UMCS, EMCS, CATV, etc.) | 0 | 0.50 | 203 | 45 |
| 48 | E-SPCL-IDEN | E-SPCLIDM- | Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |

## Discipline: Electrical

### Model File Type: Electrical Utilities Plan

| Demolition (used only in creating Existing/Demolition model files) | | | | 0 | 0.50 | 203 | 45 |
|---|---|---|---|---|---|---|---|
| 56 | E-STAT-DEMO-PHS1 | E------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 83 | 42 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 163 | 41 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D----3 | Demolition - phase 3 | | | | |
| Other Discipline Information | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note: V = Varies, NA = Not Applicable

## Discipline: Electrical

### Model File Type: Exterior Communication Systems Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Communications Cables (Copper and Fiber Optic)** | | | | | | | |
| 11 | E-COMM-OVHD | E-COMMOVM- | Overhead communications/telephone lines | COMARN | 0.50 | C/4 | C/7 |
| 12 | E-COMM-OVHD-IDEN | E-COMMOIM- | Identifier tags, symbol modifier and text | 0 | 0.35 | Y/2 | Y/4 |
| 13 | E-COMM-UNDR | E-COMMUNM- | Underground communications/telephone lines | COMUGN | 0.50 | C/4 | C/7 |
| 14 | E-COMM-UNDR-IDEN | E-COMMUIM- | Identifier tags, symbol modifier and text | 0 | 0.35 | Y/2 | Y/4 |
| **Communications Support Equipment** | | | | | | | |
| 23 | E-COMM-JBOX | E-COMMJBM- | Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.50 | 23 | 46 |
| 26 | E-COMM-EQPM | E-COMMEQM- | Other communications distribution equipment | 0 | 0.50 | 23 | 46 |
| **Utility Poles (Use only if different from Existing Electrical Utilities Plan poles)** | | | | | | | |
| 33 | E-POLE-UTIL | E-POLEUTM- | Poles | 0 | 0.50 | 203 | 45 |
| 34 | E-POLE-IDEN | E-POLEIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 35 | E-POLE-GUYS | E-POLEGYM- | Guying equipment | 0 | 0.50 | 203 | 45 |
| 36 | E-POLE-GUYS-IDEN | E-POLEGIM- | Guying equipment identifier tags, symbol modifiers, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Underground Ductbanks (to be used when multiple systems are in one ductbank system)** | | | | | | | |
| 37 | E-DUCT-MULT | E-DUCTMUM- | Ductbank | EUDUCN | 0.50 | 83 | 42 |
| 38 | E-DUCT-MULT-IDEN | E-DUCTMIM- | Identifier tags, symbol modifier and text | 0 | 0.35 | Y/2 | Y/4 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note: V = Varies, NA = Not Applicable

# Discipline: Electrical

## Model File Type: Airfield Lighting Plan

| Level # | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E---SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | E-ANNO-REFR | E----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Airfield Lighting Circuits** | | | | | | | |
| 11 | E-CIRC-SERS | E-CIRCSEM- | Series circuits | 0 | 0.50 | 203 | 45 |
| 12 | E-CIRC-MULT | E-CIRCMUM- | Multiple circuits | 0 | 0.50 | 23 | 46 |
| 13 | E-CIRC-CTRL | E-CIRCCTM- | Control and monitoring circuits | 0 | 0.50 | 163 | 41 |
| 15 | E-CIRC-IDEN | E-CIRCIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| **Devices** | | | | | | | |
| 20 | E-AIRF-DEVC | E-AIRFDEM- | Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers | 0 | 0.50 | 23 | 46 |
| **Junction Boxes** | | | | | | | |
| 23 | E-AIRF-JBOX | E-AIRFJBM- | Junction boxes, pull boxes, manholes, handholes, pedestals, splices | 0 | 0.50 | 23 | 46 |
| **Lights** | | | | | | | |
| 25 | E-LITE-OBST | E-LITEOBM- | Obstruction lights | 0 | 0.50 | 203 | 45 |
| 26 | E-LITE-DIST | E-LITEDIM- | Distance and arresting gear markers | 0 | 0.50 | 203 | 45 |
| 28 | E-LITE-APPR | E-LITEAPM- | Approach lights | 0 | 0.50 | 203 | 45 |
| 29 | E-LITE-THRS | E-LITETHM- | Threshold lights | 0 | 0.50 | 203 | 45 |
| 30 | E-LITE-RUNW | E-LITERUM- | Runway lights | 0 | 0.50 | 203 | 45 |
| 31 | E-LITE-TAXI | E-LITETAM- | Taxiway lights | 0 | 0.50 | 203 | 45 |
| 32 | E-LITE-LANE | E-LITELAM- | Hoverlane, taxilane, and helipad lights | 0 | 0.50 | 203 | 45 |
| 33 | E-LITE-SIGN | E-LITESIM- | Taxiway guidance signs | 0 | 0.50 | 203 | 45 |
| **Ductbank** | | | | | | | |
| 37 | E-AIRF-DUCT | E-AIRFDUM- | Ductbanks | EUDUCN | 0.50 | 83 | 42 |
| **Beacons** | | | | | | | |
| 42 | E-BCNS-IDEN | E-BCNSIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 43 | E-BCNS-STRB | E-BCNSSTM- | Strobe beacons | 0 | 0.50 | 203 | 45 |
| 44 | E-BCNS-MISC | E-BCNSMIM- | Miscellaneous navaids - windcones and beacons | 0 | 0.50 | 203 | 45 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | E-STAT-DEMO-PHS1 | E------M-D---1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | E-STAT-DEMO-PHS2 | E------M-D---2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | E-STAT-DEMO-PHS3 | E------M-D---3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Clearances and working space information (NEC code, etc.) | 0 | 0.25 | G/3 | G/2 |

Note: V = Varies, NA = Not Applicable

## Discipline: Electrical

### Model File Type: Details

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E-----KEP- | Keynotes with associated terminators | 0 | V | V | V |
| 3 | E-ANNO-NPLT | E-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | E-ANNO-PATT | E----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E-----SYP- | Reference bubbles, matchlines and breaklines | 0 | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E-----TEP- | Detail title text, text and associated leaders, notes | 0 | 0.35 | Y/2 | Y/4 |
| **Detail Information** | | | | | | | |
| 11 | E-DETL-GRPH | E-DETLGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | E-DETL-METR | E-DETLMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | E-DETL-INPD | E-DETLINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| **Other Discipline Information** | | | | | | | |
| 60 | E-DISC-INFO | E-DISCINM- | Information and notes for other disciplines | V | V | V | V |

Note: V = Varies

**Discipline: Electrical**

**Model File Type: Riser/One-Line Diagrams**

| Level # | Level/Layer Naming AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
|---|---|---|---|---|---|---|---|
| **General Information** | | | | 0 | V | V | V |
| 1 | E-ANNO-DIMS | E----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Keynotes with associated terminators | V | 0.18 | B/5 | B/1 |
| 3 | E-ANNO-NPLT | E----NPP- | Non-plotting graphic information | 0 | 0.18 | Gr/8 | Gr/9 |
| 4 | E-ANNO-PATT | E----PAP- | Miscellaneous patterning and hatching | 0 | 0.35 | Y/2 | Y/4 |
| 5 | E-ANNO-NOTE | E----NOP- | General notes and general remarks | 0 | 0.35 | M/6 | M/5 |
| 6 | E-ANNO-SYMB | E----SYP- | Miscellaneous symbols | 0 | 0.35 | Y/2 | Y/4 |
| 7 | E-ANNO-TEXT | E----TEP- | Miscellaneous text and callouts with associated leaders | | | | |
| **Diagram Information** | | | | V | V | V | V |
| 11 | E-DIAG-GRPH | E-DIAGGRM- | Graphics, gridlines, non-text items | 0 | 0.35 | Y/2 | Y/4 |
| 12 | E-DIAG-METR | E-DIAGMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | E-DIAG-INPD | E-DIAGINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 14 | E-DIAG-IDEN | E-DIAGIDM- | Identifier tags, symbol modifier and text | | | | |
| **Other Discipline Information** | | | | V | V | V | V |
| 60 | E-DISC-INFO | E-DISCINM- | Information and notes for other disciplines | | | | |

Note: V = Varies

## Discipline: Telecommunications

### Model File Type: Telephone/Data Plan

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | T-ANNO-DIMS | T-----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | T-ANNO-KEYN | T-----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | T-ANNO-NPLT | T-----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | T-ANNO-PATT | T-----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | T-ANNO-NOTE | T-----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | T-ANNO-SYMB | T-----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | T-ANNO-TEXT | T-----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | T-ANNO-REFR | T-----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Floor Information** | | | | | | | |
| 8 | T-FLOR-IDEN | T-FLORIDM- | Room name, space identification text (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| 9 | T-FLOR-NUMB | T-FLORNUM- | Room/space identification number and symbol (copied from Architectural - Floor Plan model file) | 0 | 0.25 | G/3 | G/2 |
| **Telecommunications Equipment** | | | | | | | |
| 10 | T-EQPM-COPP | T-EQPMCOM- | Distribution equipment for copper | 0 | 0.50 | C/4 | C/7 |
| 11 | T-EQPM-FIBR | T-EQPMFIM- | Distribution equipment for fiber optic | 0 | 0.50 | C/4 | C/7 |
| 12 | T-EQPM-RELA | T-EQPMREM- | Relays, resistors, capacitors, and inducers | 0 | 0.50 | C/4 | C/7 |
| 13 | T-EQPM-OTHR | T-EQPMOTM- | Other telecommunications equipment | 0 | 0.50 | C/4 | C/7 |
| 15 | T-EQPM-COMB | T-EQPMCMM- | Distribution equipment for both copper and fiber optics | 0 | 0.50 | C/4 | C/7 |
| **Junction Boxes** | | | | | | | |
| 14 | T-COMM-JBOX | T-COMMJBM- | Junction boxes | 0 | 0.50 | 83 | 42 |
| **Jacks** | | | | | | | |
| 28 | T-JACK-IDEN | T-JACKIDM- | Identifier tags, symbol modifier, and text | 0 | 0.35 | Y/2 | Y/4 |
| 29 | T-JACK-PHON | T-JACKPHM- | Telephone jacks | 0 | 0.50 | 203 | 45 |
| 30 | T-JACK-DATA | T-JACKDAM- | Data/LAN jacks | 0 | 0.50 | 203 | 45 |
| 31 | T-JACK-COMB | T-JACKCOM- | Combination telephone and data/LAN jacks | 0 | 0.50 | 203 | 45 |
| **Cable System** | | | | | | | |
| 50 | T-CABL-COAX | T-CABLCOM- | Coax cable | 2 | 0.50 | 83 | 42 |
| 51 | T-CABL-FIBR | T-CABLFIM- | Fiber optics cable | FIBOPT | 0.50 | 83 | 42 |
| 52 | T-CABL-IDEN | T-CABLIDM- | Cable identifiers | 0 | 0.35 | Y/2 | Y/4 |
| 53 | T-CABL-MULT | T-CABLMUM- | Multi-conductor cable | V | 0.50 | 83 | 42 |
| 54 | T-CABL-TRAY | T-CABLTRM- | Cable trays and wireways | 0 | 0.50 | 203 | 45 |
| **Demolition (used only in creating Existing/Demolition model files)** | | | | | | | |
| 56 | T-STAT-DEMO-PHS1 | T-------M-D----1 | Demolition - phase 1 | 0 | 0.50 | 203 | 45 |
| 57 | T-STAT-DEMO-PHS2 | T-------M-D----2 | Demolition - phase 2 | 0 | 0.50 | 83 | 42 |
| 58 | T-STAT-DEMO-PHS3 | T-------M-D----3 | Demolition - phase 3 | 0 | 0.50 | 163 | 41 |
| **Other Discipline Information** | | | | | | | |
| 60 | T-DISC-INFO | T-DISCINM- | Information and notes for other disciplines | V | V | V | V |

Note: V = Varies, NA = Not Applicable

**Discipline: Telecommunications**

**Model File Type: Riser Diagrams**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | T-ANNO-DIMS | T----DIP- | Witness/extension lines, dimension terminators, dimension text | 0 | V | V | V |
| 2 | T-ANNO-KEYN | T----KEP- | Reference keynotes with associated leaders | 0 | V | V | V |
| 3 | T-ANNO-NPLT | T----NPP- | Non-plotting graphic information | V | 0.18 | B/5 | B/1 |
| 4 | T-ANNO-PATT | T----PAP- | Miscellaneous patterning and hatching | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | T-ANNO-NOTE | T----NOP- | General notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | T-ANNO-SYMB | T----SYP- | Miscellaneous symbols | V | 0.35 | M/6 | M/5 |
| 7 | T-ANNO-TEXT | T----TEP- | Miscellaneous text and callouts with associated leaders | 0 | V | V | V |
| NA | T-ANNO-REFR | T----RFP- | Reference files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |
| **Diagram Information** | | | | | | | |
| 11 | T-DIAG-GRPH | T-DIAGGRM- | Graphics, gridlines, non-text items | V | V | V | V |
| 12 | T-DIAG-METR | T-DIAGMEM- | Metric-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 13 | T-DIAG-INPD | T-DIAGINM- | Inch-pound-specific dimensions and notes | 0 | 0.35 | Y/2 | Y/4 |
| 14 | T-DIAG-IDEN | T-DIAGIDM- | Identifier tags, symbol modifier and text | 0 | 0.35 | Y/2 | Y/4 |
| **Other Discipline Information** | | | | | | | |
| 60 | T-DISC-INFO | T-DISCINM- | Information and notes for other disciplines | V | V | V | V |

Note: V = Varies, NA = Not Applicable

# Appendix B
# Sheet File Level/Layer Assignment Tables

This appendix provides the sheet file level/layer assignment tables:

## Discipline: General

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 2 | G-ANNO-KEYN | G----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | G-ANNO-LEGN | G----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | G-ANNO-PATT | G----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | G-ANNO-NOTE | G----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | G-ANNO-SYMB | G----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, | V | 0.35 | M/6 | M/5 |
| 7 | G-ANNO-TEXT | G----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | G-ANNO-REDL | G----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | G-ANNO-REVS | G----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | G-ANNO-REFR | G----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Hazardous Materials

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | H-ANNO-DIMS | H-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | H-ANNO-KEYN | H-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | H-ANNO-LEGN | H----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | H-ANNO-PATT | H----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | H-ANNO-NOTE | H----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | H-ANNO-SYMB | H-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | H-ANNO-TEXT | H-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | H-ANNO-REDL | H-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | H-ANNO-REVS | H-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | H-ANNO-REFR | H-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note:  V = Varies, NA = Not Applicable**

## Discipline: Survey/Mapping

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | V-ANNO-DIMS | V-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | V-ANNO-KEYN | V-----KEP- | Sheet-specific referencekeynotes with associated leaders | 0 | V | V | V |
| 3 | V-ANNO-LEGN | V-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | V-ANNO-PATT | V-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | V-ANNO-NOTE | V-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | V-ANNO-SYMB | V-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | V-ANNO-TEXT | V-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | V-ANNO-REDL | V-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | V-ANNO-REVS | V-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | V-ANNO-REFR | V-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note: V = Varies, NA = Not Applicable**

**Discipline: Geotechnical**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | B-ANNO-DIMS | B-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | B-ANNO-KEYN | B-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | B-ANNO-LEGN | B-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | B-ANNO-PATT | B-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | B-ANNO-NOTE | B-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | B-ANNO-SYMB | B-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | B-ANNO-TEXT | B-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | B-ANNO-REDL | B-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | B-ANNO-REVS | B-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | B-ANNO-REFR | B-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

**Discipline: Civil**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | C-ANNO-DIMS | C----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | C-ANNO-KEYN | C----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | C-ANNO-LEGN | C----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | C-ANNO-PATT | C----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | C-ANNO-NOTE | C----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | C-ANNO-SYMB | C----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | C-ANNO-TEXT | C----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | C-ANNO-REDL | C----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | C-ANNO-REVS | C----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | C-ANNO-REFR | C----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

## Discipline: Landscape

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | L-ANNO-DIMS | L-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | L-ANNO-KEYN | L-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | L-ANNO-LEGN | L-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | L-ANNO-PATT | L-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | L-ANNO-NOTE | L-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | L-ANNO-SYMB | L-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | L-ANNO-TEXT | L-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | L-ANNO-REDL | L-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | L-ANNO-REVS | L-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | L-ANNO-REFR | L-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

## Discipline: Structural

| Level # | Level/Layer Naming | | | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | Level/Layer Description | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | S-ANNO-DIMS | S-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | S-ANNO-KEYN | S-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | S-ANNO-LEGN | S-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | S-ANNO-PATT | S-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | S-ANNO-NOTE | S-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | S-ANNO-SYMB | S-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | S-ANNO-TEXT | S-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | S-ANNO-REDL | S-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | S-ANNO-REVS | S-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | S-ANNO-REFR | S-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

## Discipline: Architectural

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | A-ANNO-DIMS | A-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | A-ANNO-KEYN | A-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | A-ANNO-LEGN | A-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | A-ANNO-PATT | A-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | A-ANNO-NOTE | A-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | A-ANNO-SYMB | A-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | A-ANNO-TEXT | A-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | A-ANNO-REDL | A-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | A-ANNO-REVS | A-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | A-ANNO-REFR | A-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note: V = Varies, NA = Not Applicable**

## Discipline: Interiors

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | I-ANNO-DIMS | I----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | I-ANNO-KEYN | I----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | I-ANNO-LEGN | I----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | I-ANNO-PATT | I----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | I-ANNO-NOTE | I----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | I-ANNO-SYMB | I----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | I-ANNO-TEXT | I----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | I-ANNO-REDL | I----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | I-ANNO-REVS | I----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | I-ANNO-REFR | I----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note:  V = Varies, NA = Not Applicable

## Discipline: Fire Protection

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | F-ANNO-DIMS | F-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | F-ANNO-KEYN | F-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | F-ANNO-LEGN | F-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | F-ANNO-PATT | F-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | F-ANNO-NOTE | F-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | F-ANNO-SYMB | F-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | F-ANNO-TEXT | F-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | F-ANNO-REDL | F-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | F-ANNO-REVS | F-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | F-ANNO-REFR | F-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note: V = Varies, NA = Not Applicable**

# Discipline: Plumbing

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | P-ANNO-DIMS | P----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | P-ANNO-KEYN | P----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | P-ANNO-LEGN | P----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | P-ANNO-PATT | P----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | P-ANNO-NOTE | P----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | P-ANNO-SYMB | P----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | P-ANNO-TEXT | P----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | P-ANNO-REDL | P----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | P-ANNO-REVS | P----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | P-ANNO-REFR | P----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

## Discipline: Mechanical

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | M-ANNO-DIMS | M-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | M-ANNO-KEYN | M-----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | M-ANNO-LEGN | M-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | M-ANNO-PATT | M-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | M-ANNO-NOTE | M-----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | M-ANNO-SYMB | M-----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | M-ANNO-TEXT | M-----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | M-ANNO-REDL | M-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | M-ANNO-REVS | M-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | M-ANNO-REFR | M-----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

**Note: V = Varies, NA = Not Applicable**

**Discipline: Electrical**

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | E-ANNO-DIMS | E----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | E-ANNO-KEYN | E----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | E-ANNO-LEGN | E----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | E-ANNO-PATT | E----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | E-ANNO-NOTE | E----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | E-ANNO-SYMB | E----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | E-ANNO-TEXT | E----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | E-ANNO-REDL | E----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | E-ANNO-REVS | E----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | E-ANNO-REFR | E----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

## Discipline: Telecommunications

| Level # | Level/Layer Naming | | Level/Layer Description | Graphics | | | |
|---|---|---|---|---|---|---|---|
| | AIA Format | ISO Format | | Line Style | Line Width (mm) | AutoCAD Line Color/# | MicroStation Line Color/# |
| **General Information** | | | | | | | |
| 1 | T-ANNO-DIMS | T-----DIP- | Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text) | 0 | V | V | V |
| 2 | T-ANNO-KEYN | T----KEP- | Sheet-specific reference keynotes with associated leaders | 0 | V | V | V |
| 3 | T-ANNO-LEGN | T-----LEP- | Legends and schedules | 0 | V | V | V |
| 4 | T-ANNO-PATT | T-----PAP- | Sheet-specific patterning and hatching (e.g., keyplan patterning) | 0 | 0.18 | Gr/8 | Gr/9 |
| 5 | T-ANNO-NOTE | T----NOP- | Sheet-specific notes and general remarks | 0 | 0.35 | Y/2 | Y/4 |
| 6 | T-ANNO-SYMB | T----SYP- | Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.) | V | 0.35 | M/6 | M/5 |
| 7 | T-ANNO-TEXT | T----TEP- | Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text) | 0 | V | V | V |
| 62 | T-ANNO-REDL | T-----REP- | Redlines | 0 | 0.25 | R/1 | R/3 |
| 63 | T-ANNO-REVS | T-----RVP- | Revisions | 0 | 0.50 | C/4 | C/7 |
| NA | T-ANNO-REFR | T----RFP- | Referenced model files (AutoCAD users only, see Chapter 4) | NA | NA | NA | NA |

Note: V = Varies, NA = Not Applicable

# Appendix C
# Color Comparison

For more information on Screened Colors, see the section "Screening" in Chapter 3 "Graphic Concepts."

## Appendix C
## Color Comparison

| AutoCAD Color No. | MicroStation Color No. | Screened Color |
|:---:|:---:|:---:|
| 1 | 3 | |
| 2 | 4 | |
| 3 | 2 | |
| 4 | 7 | |
| 5 | 1 | |
| 6 | 5 | |
| 7 | 0 | |
| 8 | 9 | |
| 9 | 14 | |
| 10 | 10 | Yes |
| 11 | 19 | Yes |
| 12 | 27 | Yes |
| 13 | 35 | Yes |
| 14 | 43 | Yes |
| 15 | 51 | Yes |
| 16 | 59 | Yes |
| 17 | 67 | |
| 18 | 75 | |
| 19 | 83 | Yes |
| 20 | 6 | |
| 21 | 30 | |
| 22 | 22 | |
| 23 | 46 | |
| 24 | 38 | |
| 25 | 62 | |
| 26 | 54 | |
| 27 | 78 | |
| 28 | 70 | |
| 29 | 94 | |
| 30 | 86 | |
| 31 | 110 | |
| 32 | 102 | |
| 33 | 126 | |
| 34 | 118 | |
| 35 | 142 | |
| 36 | 134 | |
| 37 | 158 | |
| 38 | 150 | |
| 39 | 174 | |
| 40 | 166 | |
| 41 | 190 | |
| 42 | 182 | |
| 43 | 206 | |
| 44 | 198 | |
| 45 | 222 | |
| 46 | 214 | |

| Appendix C Color Comparison | | |
| --- | --- | --- |
| **AutoCAD Color No.** | **MicroStation Color No.** | **Screened Color** |
| 47 | 238 | |
| 48 | 230 | |
| 49 | 251 | |
| 50 | 20 | Yes |
| 51 | 28 | Yes |
| 52 | 36 | Yes |
| 53 | 44 | Yes |
| 54 | 52 | Yes |
| 55 | 60 | Yes |
| 56 | 68 | Yes |
| 57 | 76 | |
| 58 | 84 | |
| 59 | 92 | Yes |
| 60 | 100 | |
| 61 | 108 | |
| 62 | 116 | |
| 63 | 124 | |
| 64 | 132 | |
| 65 | 140 | |
| 66 | 148 | |
| 67 | 156 | |
| 68 | 164 | |
| 69 | 172 | |
| 70 | 180 | |
| 71 | 188 | |
| 72 | 196 | |
| 73 | 204 | |
| 74 | 212 | |
| 75 | 220 | |
| 76 | 228 | |
| 77 | 236 | |
| 78 | 244 | |
| 79 | 252 | |
| 80 | 11 | |
| 81 | 26 | |
| 82 | 18 | |
| 83 | 42 | |
| 84 | 34 | |
| 85 | 58 | |
| 86 | 50 | |
| 87 | 74 | |
| 88 | 66 | |
| 89 | 90 | |
| 90 | 82 | Yes |
| 91 | 106 | Yes |
| 92 | 98 | Yes |

## Appendix C
## Color Comparison

| AutoCAD Color No. | MicroStation Color No. | Screened Color |
|---|---|---|
| 93 | 122 | Yes |
| 94 | 114 | Yes |
| 95 | 138 | Yes |
| 96 | 130 | Yes |
| 97 | 154 | |
| 98 | 146 | |
| 99 | 170 | Yes |
| 100 | 162 | |
| 101 | 186 | |
| 102 | 178 | |
| 103 | 202 | |
| 104 | 194 | |
| 105 | 218 | |
| 106 | 210 | |
| 107 | 234 | |
| 108 | 226 | |
| 109 | 250 | |
| 110 | 242 | |
| 111 | 246 | |
| 112 | 247 | |
| 113 | 16 | |
| 114 | 32 | |
| 115 | 48 | |
| 116 | 64 | |
| 117 | 80 | |
| 118 | 96 | |
| 119 | 112 | |
| 120 | 12 | |
| 121 | 15 | |
| 122 | 23 | |
| 123 | 31 | |
| 124 | 39 | |
| 125 | 47 | |
| 126 | 55 | |
| 127 | 63 | |
| 128 | 71 | |
| 129 | 79 | |
| 130 | 87 | Yes |
| 131 | 95 | Yes |
| 132 | 103 | Yes |
| 133 | 111 | Yes |
| 134 | 119 | Yes |
| 135 | 127 | Yes |
| 136 | 135 | Yes |
| 137 | 143 | |
| 138 | 151 | |

## Appendix C
## Color Comparison

| AutoCAD Color No. | MicroStation Color No. | Screened Color |
|---|---|---|
| 139 | 159 | Yes |
| 140 | 167 | |
| 141 | 175 | |
| 142 | 183 | |
| 143 | 191 | |
| 144 | 199 | |
| 145 | 207 | |
| 146 | 215 | |
| 147 | 223 | |
| 148 | 231 | |
| 149 | 239 | |
| 150 | 40 | |
| 151 | 72 | |
| 152 | 88 | |
| 153 | 104 | |
| 154 | 136 | |
| 155 | 152 | |
| 156 | 184 | |
| 157 | 216 | |
| 158 | 232 | |
| 159 | 248 | |
| 160 | 17 | |
| 161 | 25 | |
| 162 | 33 | |
| 163 | 41 | |
| 164 | 49 | |
| 165 | 57 | |
| 166 | 65 | |
| 167 | 73 | |
| 168 | 81 | |
| 169 | 89 | |
| 170 | 97 | Yes |
| 171 | 105 | Yes |
| 172 | 113 | Yes |
| 173 | 121 | Yes |
| 174 | 129 | Yes |
| 175 | 137 | Yes |
| 176 | 145 | Yes |
| 177 | 153 | |
| 178 | 161 | |
| 179 | 169 | Yes |
| 180 | 177 | |
| 181 | 185 | |
| 182 | 193 | |
| 183 | 201 | |
| 184 | 209 | |

## Appendix C
## Color Comparison

| AutoCAD Color No. | MicroStation Color No. | Screened Color |
|---|---|---|
| 185 | 217 | |
| 186 | 225 | |
| 187 | 233 | |
| 188 | 241 | |
| 189 | 249 | |
| 190 | 245 | |
| 191 | 128 | |
| 192 | 144 | |
| 193 | 160 | |
| 194 | 176 | |
| 195 | 192 | |
| 196 | 208 | |
| 197 | 224 | |
| 198 | 240 | |
| 199 | 254 | |
| 200 | 13 | |
| 201 | 29 | |
| 202 | 21 | |
| 203 | 45 | |
| 204 | 37 | |
| 205 | 61 | |
| 206 | 53 | |
| 207 | 77 | |
| 208 | 69 | |
| 209 | 93 | |
| 210 | 85 | Yes |
| 211 | 109 | Yes |
| 212 | 101 | Yes |
| 213 | 125 | Yes |
| 214 | 117 | Yes |
| 215 | 141 | Yes |
| 216 | 133 | Yes |
| 217 | 157 | |
| 218 | 149 | |
| 219 | 173 | Yes |
| 220 | 165 | |
| 221 | 189 | |
| 222 | 181 | |
| 223 | 205 | |
| 224 | 197 | |
| 225 | 221 | |
| 226 | 213 | |
| 227 | 237 | |
| 228 | 229 | |
| 229 | 253 | |
| 230 | 91 | |

## Appendix C
## Color Comparison

| AutoCAD Color No. | MicroStation Color No. | Screened Color |
|---|---|---|
| 231 | 99 | |
| 232 | 107 | |
| 233 | 115 | |
| 234 | 123 | |
| 235 | 131 | |
| 236 | 139 | |
| 237 | 147 | |
| 238 | 155 | |
| 239 | 163 | |
| 240 | 171 | |
| 241 | 179 | |
| 242 | 187 | |
| 243 | 195 | |
| 244 | 203 | |
| 245 | 211 | |
| 246 | 219 | |
| 247 | 227 | |
| 248 | 235 | |
| 249 | 243 | |
| 250 | 8 | Yes |
| 251 | 200 | Yes |
| 252 | 168 | Yes |
| 253 | 120 | Yes |
| 254 | 56 | Yes |
| 255 | 24 | Yes |

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**14. ABSTRACT**

    The "A/E/C CADD Standard Manual" has been developed by the CADD/GIS Technology Center (CGTC) to reduce redundant CADD standardization efforts within the Army, Navy, and Air Force. The manual is part of an initiative to consolidate existing CADD drafting standards and to develop data standards that address the entire life-cycle of facilities within the Department of Defense Tri-Service.

    The CADD drafting standards addressed in the "A/E/C CADD Standard Manual" include presentation graphics, level/layer assignments, metric/English scales, electronic file naming, and standard symbology. As the manual evolves, it will also include nongraphic database standards that address issues such as cost engineering and specification generation. The CGTC's primary goal is to develop a CADD standard that is generic enough to operate under various CADD software packages (such as Intergraph's MicroStation and Autodesk's AutoCAD) and incorporate existing industry standards when possible.

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CADD

CADD standards
Drafting standards

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